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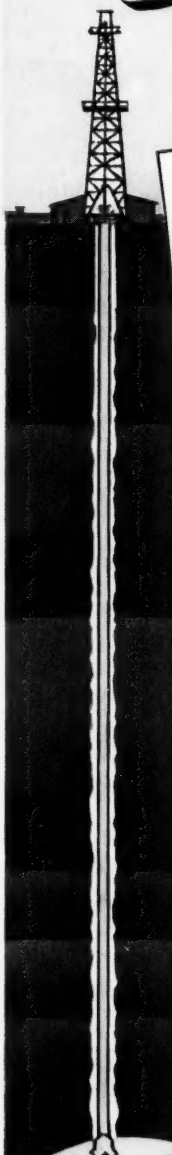

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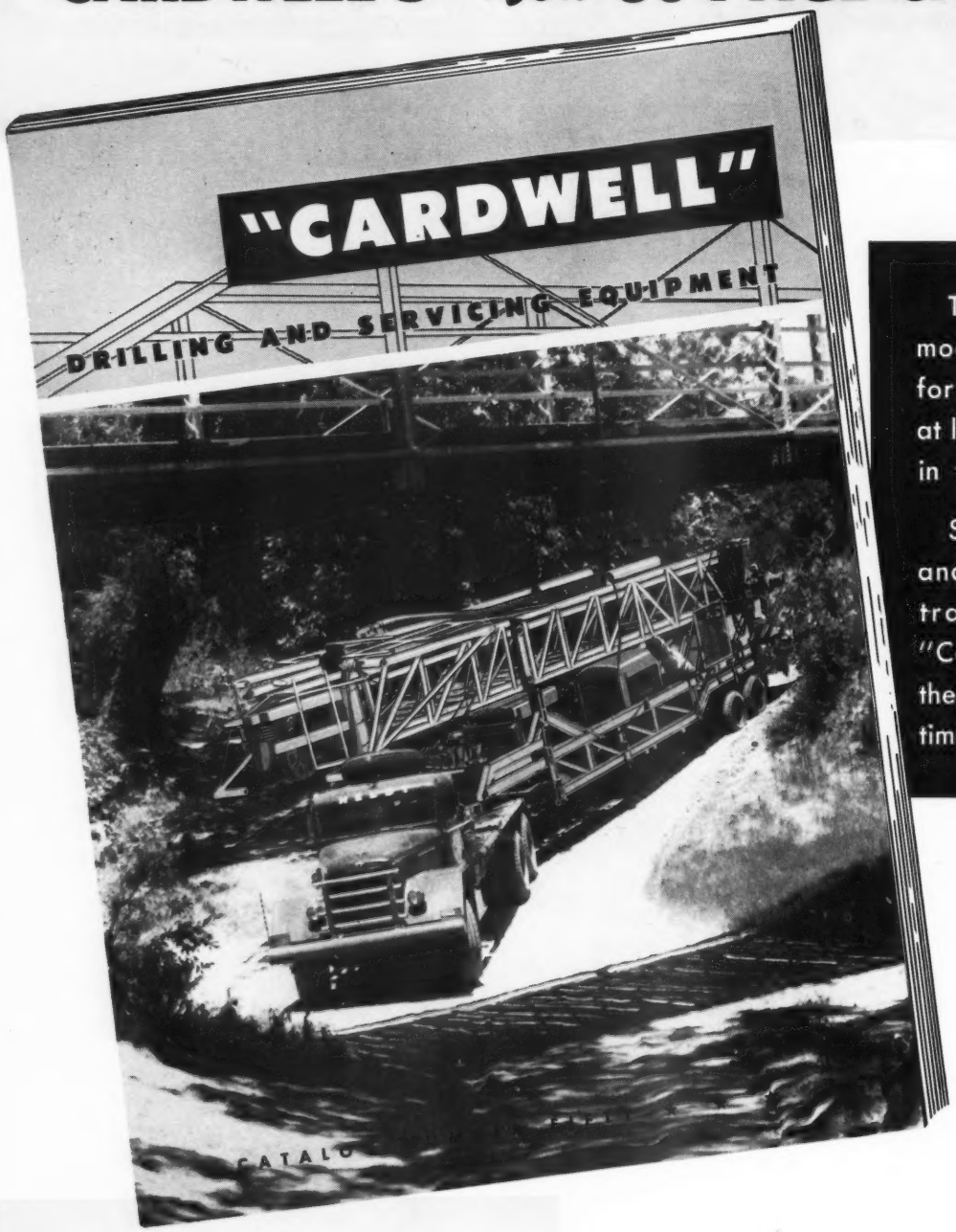

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CALIFORNIA
OIL WORLD

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December 15th, 1949
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Washington Highlights

Barring major strikes or war, Secretary of Commerce Charles Sawyer foresees a rosy future for business in 1950. The Secretary, who recently wound up a 15,000-mile tour to study economic conditions, said he believes the first half of the year ahead would see conditions on parity or even better than in the comparable period of the current year.

Ohio Republican Senator Taft said it would cost some $12,000,000,000 yearly to pay $100 a month pension to all persons over the age of 65 years. He asserted that the whole subject of pensions in Government and industry is in complete confusion and that it should receive the most careful and detailed study by Congress. At a news conference, the Senator announced he has no intentions of running for the Senate again after 1950. Taft for many years has been one of the great powers of the Republicans in the Senate.

Signs in Washington denote the President will take a "hands-off" attitude toward the California gubernatorial race. The Chief executive has made known that he will not mix in Democratic primaries in California. If necessary, however, political observers foresee his hand in the November finals in 1950.

James E. Shoemaker, director of program adjustments for the National Resources Board, has resigned to become vice president of the Bank of Hawaii. Shoemaker has been on leave from Hawaii University, where he was chairman of the economics department.

Senator John W. Bricker, Republican of Ohio, has proposed a new political party made up of old line Republicans and Southern Democrats to end the 17-year famine of the GOP. He named Dwight G. Eisenhower, Columbia University president, and James F. Byrnes, Truman cabinet member, as the two men he would most like to have bring about the coalition. Byrnes is a Democrat of South Carolina.

Oscar L. Chapman is now the Secretary of Interior, having been sworn in before more than 1000 witnesses. Retiring Secretary Krug presented him to Chief Justice Vinson who administered the oath. Krug continued his reticence in discussing the reasons for his sudden resignation. He told newsmen, however, he plans to visit Sea Island, Georgia, and then journey on to Arizona for a long rest.

"A man in Washington who wants to play the Almighty with our money" is not General Dwight G. Eisenhower's idea of liberalism. This was disclosed in the General's address before a gathering of Scottish-Americans in New York. He endorsed the doctrine of Thomas Jefferson that the best government is the one that governs the least. The "man in Washington" was not identified by the wartime leader. He declared too much emphasis is being placed on personal security at the expense of the liberty of the individual.

Robert R. Mullen, Scarsdale, N. Y., newsman and advertising executive, is the new director of information for the Economic Cooperation Administration.

According to the U. S. Geological survey an interesting discovery of radioactive rare-earth minerals has been made in Southeast California. The agency said the uranium and thorium content of the find appear to be too small to make the deposit of commercial value for the recovery of these elements. The lodes of the area, nevertheless, are a potential source of cerium and lanthanum, the agency indicated. The deposit was unearthed last April in San Bernardino County, near the Mountain Pass gasoline station on Highway No. 91. This is approximately 33 miles northeast of Baker, California, and 53 miles southwest of Las Vegas, Nevada. News of the discovery was released after it was determined the Atomic Energy Commission was not interested in a survey of the deposit and the area.

season's greetings
H C Smith
OIL TOOL CO.

The Cymric Absorption Plant

By F. H. Lacy, Jr. and Warren H. Kraft
Honolulu Oil Corp.

November Meeting

Application of a simple and extremely efficient process-flow to the special problem of a rapidly declining plant load, and careful attention to equipment selection, costs and layout, made the installation of a "marginal" gasoline plant in the Cymric Field, California, an economically sound project.

Field and Project History

During 1946, the Superior Oil Company, Standard Oil Company of California and Honolulu Oil Corporation concluded an agreement to install a joint gas-gathering system and a compressor plant in the Cymric Oil Field of California. The initial gas-gathering layout consisted of a 425# high pressure system and a 25# low pressure system. Compression of the low pressure gas was carried on in two stages, with a final discharge pressure of 425#. At a later date an intermediate, or 125# gathering system, was installed. Honolulu Oil Corporation was designated as operator of the facilities, and the operating agreement provided that an absorption plant would be built at a date when economics warranted the investment.

The high pressure gas-gathering system was put in operation in June, 1946, and the compressor plant and low pressure gas-gathering system started handling gas in November, 1946. Surplus gas above field fuel requirements was delivered to the gas purchasing company after suppression of its dew point by cooling.

During the latter part of 1947, as market conditions for LPG and natural gasoline improved and better estimates of the future reserves and gas rates to be expected from the Cymric Field became available, a study indicated that a payout on an absorption plant was possible. Another, and probably the biggest, contributing factor was the increased richness of the gas insured by declining reservoir pressure and a consequent shift in the ratio of low pressure to high pressure gas. The problem then, as in so many cases, became one of designing and constructing an absorption plant as rapidly and economically as possible.

The approximate amount of capital that could be risked was agreed upon and as the cost of an absorption plant is recognized as being largely a function of the total oil circulation rate, a study was made of a plant with limited oil circulation that would meet the following process requirements:

1. Handle an initial high gas rate of lean gas through the absorber.
2. Effect a maximum recovery of gasoline and liquefied petroleum gas when the gas load was reduced and the gas richness increased.
3. Use a minimum of fuel gas, cooling water and electricity.

The basic study with its correlative analysis of various processing cycles proposed to meet the above plant requirements, consumed the remainder of 1947 and early part of 1948. In February 1948 a decision was reached to install a plant with the process cycle illustrated in the accompanying flow sheet. Design calculations indicated that the plant would:

(1) Handle an initial gas load of 35 to 40 million cubic feet per day of lean gas.

(2) Effect a maximum recovery of butanes plus and a relatively high recovery of propane from 15 million cubic feet per day of rich gas.

(3) Be capable of recovering 85 to 90% of propanes from 15 million cubic feet per day of rich gas with only minor additions to the initially installed equipment.

(4) Retain at least 90% of the propane recovered at the main absorber under any and all conditions of plant operation.

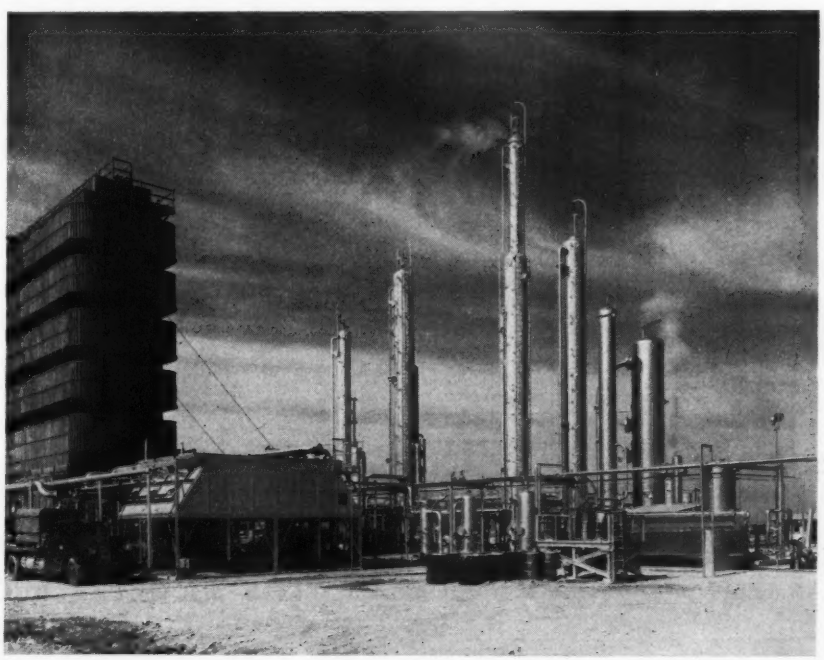
(5) Be able to produce either specification Butane-Propane mixture or propane as desired.

(6) Meet the required economy on fuel, electricity and water.

Ground was broken for the plant in May, 1948 and product streams first run to storage on November 11, 1948.

General Plant Flow

At the present time, due to de-



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clining field pressure, all gas is gathered at either 25# or 125#. The compressor plant handling this gas consists of five gas engine driven units totaling 2,960 horsepower. All jacket-water cooling is done by radiators. After cooling and scrubbing, the rich gas passes through a single main absorber, and from there to sales, field fuel, etc. The rich oil from the main absorber is fed cold to a combination rich-oil rectifier and reabsorber. This unit is side heated by oil-to-oil interchange, and uses a vapor stream from the still reflux accumulator for rectification of the rich oil. The overhead vapors from this column are used for plant fuel. From the bottom of the combination rectifier and reabsorber the rich-oil passes through a second oil-to-oil heat exchanger on its way to a single high-pressure stripping still. Heat is applied to the still by a re-circulation direct-fired side heater. Part of the still overhead is condensed as a de-ethanized liquid product—with the remaining vapors being returned to the combination rectifier and reabsorber for rectification service. The resultant de-ethanized liquid product is fed to a single conventional fractionator. This column operates totally condensing, with an overhead product of specification L.P.G. and a gasoline kettle product.

With this general plant flow in mind, we can consider some of the major units in greater detail.

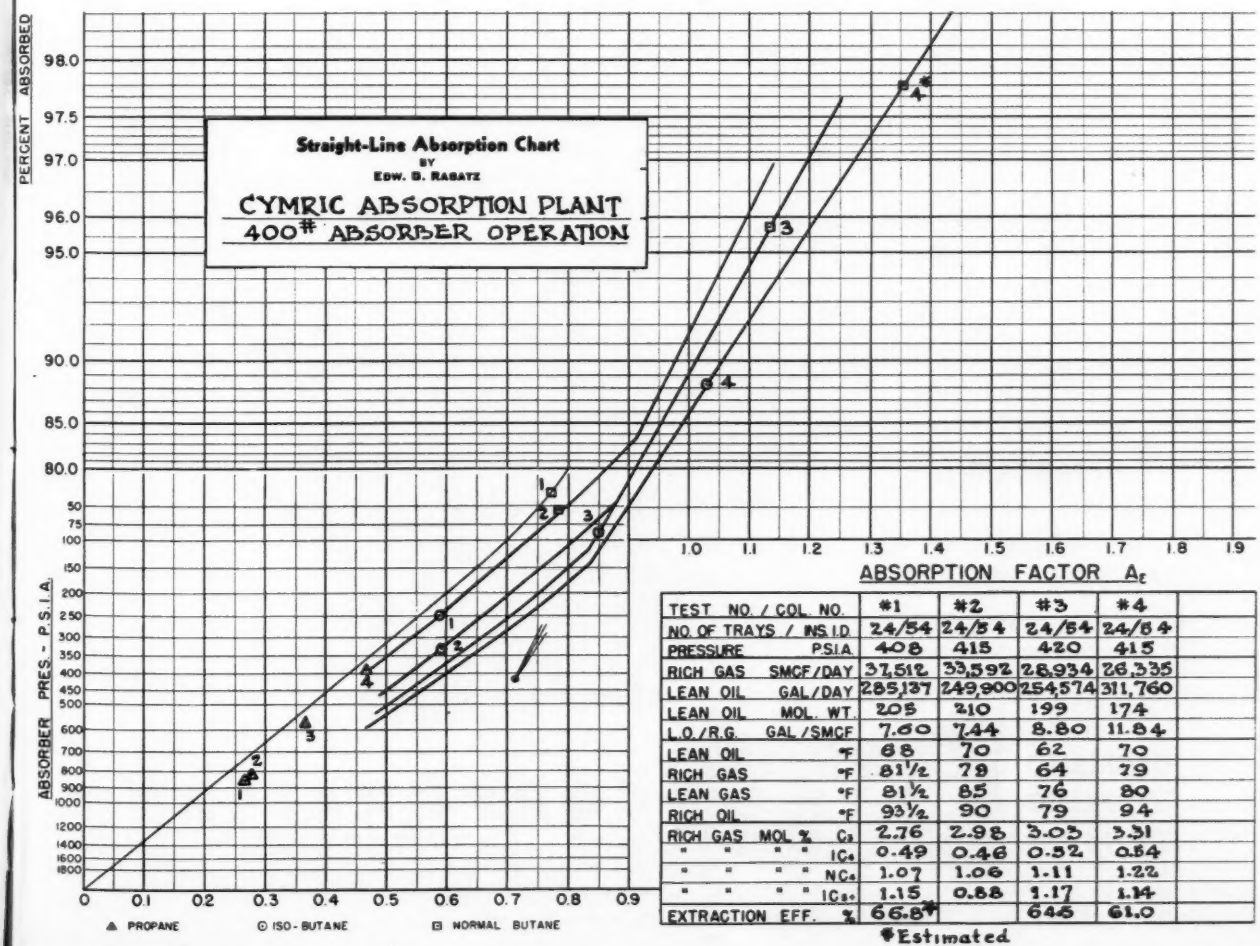
Main Absorber

The main absorber is designed to operate at 425 psig. It is equipped with 24 perforated plates specially designed to maintain high absorption efficiencies over a wide range of loading. Original operating guarantees called for a total butanes recovery of 60% at a 30,000 MCF/D rich-gas rate when circulating 171 gpm of 180 molecular weight lean-oil at lean-oil and rich-gas temperatures of 80°F. Plant tests show this column exceeds its 30,000 MCF/D efficiency guarantee by a substantial margin.

The column is equipped with a side draw-off tray which will be used for intercooling the absorber if and when it is desired to achieve propane recoveries of the order of 85-90% at the storage tanks. To achieve these high propane recoveries of the order of 85-90% at the storage tanks. To achieve these high propane recoveries, the only addition needed to the present plant equipment is the installation of a side-circulation pump and associated gas and oil chilling units. Propane absorption recoveries of 93+% at a 15,000 MCF/D rich-gas rate are anticipated with present oil rates on chilling of the rich-gas and absorber side-circulation streams to 65°F.

Combination Rectifier and Reabsorber

The combination rectifier and reabsorber is designed to retain, un-



TEST NO. / COL. NO.	#1	#2	#3	#4
NO. OF TRAYS / INS. I.D.	24/54	24/54	24/54	24/54
PRESSURE P.S.I.A.	408	415	420	415
RICH GAS SMCF/DAY	37,512	33,592	28,934	26,335
LEAN OIL GAL/DAY	285,137	249,900	254,574	311,760
LEAN OIL MOL. WT.	205	210	199	174
L.O./R.G. GAL/SMCF	7.60	7.44	8.80	11.84
LEAN OIL °F	68	70	62	70
RICH GAS °F	81½	79	64	79
LEAN GAS °F	81½	85	76	80
RICH OIL °F	93½	90	79	94
RICH GAS MOL % C_3	2.76	2.98	3.05	3.31
" " " " IC_4	0.49	0.46	0.52	0.54
" " " " NC_4	1.07	1.06	1.11	1.22
" " " " IC_5+	1.15	0.88	1.17	1.14
EXTRACTION EFF. %	66.8*		64.6	61.0

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der all conditions of absorber operation and intake-gas volume and composition, 90+% of the propane content of the combined stream of rich-oil and compressor-plant condensate while so deethanizing this stream that the resultant fractionator feed contains not over 2½% of ethane in its propane and lighter fraction. Design oil-circulation to the reabsorber was 35 gpm at a plant intake rate of 30,000 MCF/D rich-gas—or 20% of the main-absorber oil circulation. In actual operation, this percent of reabsorber oil holds the ethane content of the propane and lighter fraction of the fractionator feed to between 1.5 and 2.0% with propane retentions of 90+%.

Side-heating of the rectifier is used in combination with the recirculation of rectifying vapors between the still-product accumulator and the rectifier base. This avoids both the high final lean-oil temperatures associated with the conventional base-heated rectifier cycle and the employment of expensive secondary heat-exchange circuits for heat conservation.

The rich oil from the absorber enters this unit cold at the top of the rectifying section. A recirculating side-stream is withdrawn from an intermediate rectifier tray and pumped through a side-heating interchanger on the hot stripped lean-oil stream. Rectifying vapors from the still accumulator are fed to the base of the unit. Control of the side-heater temperature is maintained by a temperature-actuated bypass valve on the hot lean-oil at the still-feed pre-heating interchanger, while the volume of rectifying vapors is controlled by controlling the temperature in the still reflux accumulator.

By proper mutual adjustment of the rectifier temperature and rectifying vapor volume, it is possible to automatically control the ethane-propane ratio in the fractionator feed within close limits for wide and relatively rapid changes in intake-gas composition and volume such as experienced at certain times of the year at Cymric between a hot afternoon's operation and the following cold early morning's operation.

As in the main absorber, specially designed perforated plate trays are utilized in the combination rich-oil rectifier and reabsorber to attain high efficiencies over wide ranges of column loading.

TABLE 1

MAIN ABSORBER OPERATION

Test No.		1	2	3	4	5**
Pressure	PSIG	393	400	405	400	400
Rich Gas	SMCF/Day	37,512	33,592	28,934	26,335	15,000
Lean Gas	" "	35,800	32,000	27,149	24,210	13,000
Lean Oil	Gals/Day	285,137	249,900	254,574	311,760	310,000
Lean Oil	Mol. Wt.	205	210	199	174	175
Lean Oil	oAPI	37.2	36.8	38.7	39.9	39.9
Lean Oil/Rich Gas	Gal/SMCF	7.60	7.44	8.80	11.84	20.7
Lean Oil Temp.	°F	68	70	62	70	70
Rich Gas Temp.	"	81½	79	64	79	80
Lean Gas Temp.	"	81½	85	76	80	82
Rich Oil Temp.	"	93½	90	79	94	96
Rich Gas Comp.	Mol. Pct.					
	H_2O	0.14	0.12	0.07	....	....
	CO_2	0.90	1.00	0.75	1.60	2.22
	C_1	87.87	87.61	87.36	85.84	81.88
	C_2	5.62	5.89	5.99	6.35	7.31
	C_3	2.76	2.98	3.03	3.31	4.30
	iC_4	0.49	0.46	0.52	0.54	0.75
	nC_4	1.07	1.06	1.11	1.22	1.72
	iC_5+	1.15	0.88	1.17	1.14	1.82
	Total	100.00	100.00	100.00	100.00	100.00
Absorption	Pct.					
	C_3	21.8	23.3	33.7	44.4	80.0
	iC_4	55.4	48.3	71.1	88.1	99.0
	nC_4	76.9	74.9	95.8	97.8*	99.0

* Estimated nC_4 absorption, test data showed 100%.
** Anticipated 15,000 MCF/D Operation Without Side Cooling.

TABLE 2

RECTIFIER—REABSORBER OPERATION

Test No.		3	4
Pressure	PSIG	105	105
Discharge Gas	SMCF/Day	815	920
Discharge Gas	°F		78
Lean Oil to Main Absorber	Gals/Day	254,574	311,760
Lean Oil to Re-Absorber	"	52,840	54,288
Lean Oil to Re-Absorber—Percent of Lean Oil to Main Absorber		20.7	17.2
Compressor Condensate	Gals/Day	1,850*	3,190
Compressor Condensate	Lqd. Pct.		
	C_1	0.14	0.18
	C_2	0.75	0.51
	C_3	3.00	1.63
	iC_4	1.86	1.39
	nC_4	6.46	3.59
	iC_5+	87.79	92.70
Rich Oil to Rectifier	°F	79	94
Rich Oil to Side Heater	"	107	118
Rich Oil from Rectifier Bottom	"	175	173
Recycle Vapor	SMCF/Day	2,065	2,520
Recycle Vapor	°F	135	132
Propane in Rectifier Feed Retained in Liquid Product	Pct.	91.1	89.8
Ethane in Propane and Lighter Fraction of Liquid Product	"	1.42	2.06
Lean Oil from Exchangers to Coolers	°F	124	133
Plant Production			
Gasoline	G.P.D.	20,283	18,695
Gasoline	R.V.P.	24.6	20.3
L.P.G.	G.P.D.	15,470	18,625
L.P.G.	V.P.	128	118
Total Liquid Product	G.P.D.	35,753	37,320

* Calculated from plant balance.

TABLE 3

ABSORPTION PLANT FUEL & STEAM CONSUMPTION

Fuel Gas		Test 3	Test 4
Oil Heater	SMCF/Day	224	320
Boilers	" "	208	177
Gas Engines	" "	35	37
Total SMCF/Day		467	534
Percent of Rich Gas Rate		1.61	2.03
Net Heating Value BTU/cu.ft.		1140	1146
Steam			
Process Steam lb/hr.		4320	5000
Gaso. Shipping Pump lb/hr.		450	450
Total Boiler Load lb/hr.		4770	5450

High Pressure Still

Because of the need to return rectifying vapors from the stripping still accumulator back to the rich-oil rectifier, the stripping still at Cymric is operated at approximately 115 psig. This vessel uses four separate tray designs. Exchanger preheated feed is introduced in the middle of the column. The partially stripped oil is withdrawn at a point several trays below the feed tray, pumped through the fired heater, and returned to the column. Stripping steam, side water-draw-

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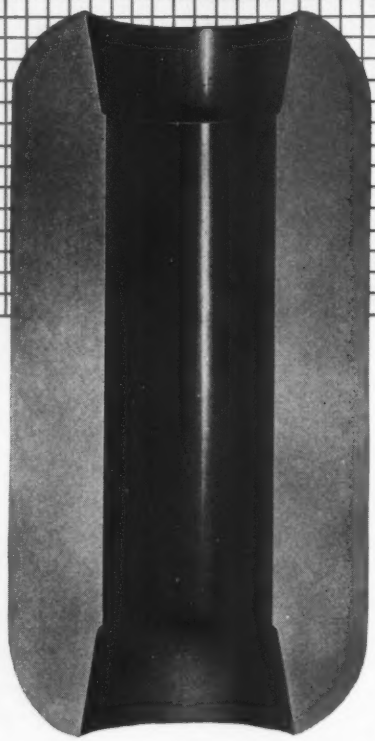

↑ These tapered recesses allow less stretching at the ends, keeping stress here less than in thick body when Protector is installed, thus eliminating tearing at this vulnerable point.

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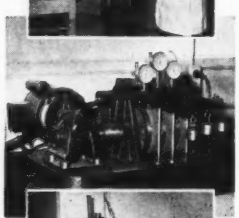
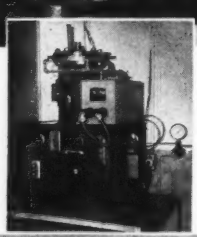
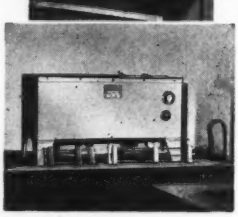


← This machine tests the abrasion-resistance of rubber samples—another example of why we know our Protectors will give long wear.



← Rubber samples are aged, equivalent to two years, in a few hours time in high pressure oxygen ageing equipment.



← The resistance of rubber under tension to hot oil is determined in this bath that simulates actual operating conditions.

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offs, and cold reflux are employed in the conventional manner. Lean oil from the bottom flows under still pressure back through the still-feed heat exchanger, rectifier side-heater, and 1st stage water coolers—after which it is picked up by the lean-oil circulating pump, forced through a final water cooler and returned to the absorbers.

Product Fractionator

In order to hold capital expenditure to a minimum, only one product fractionator was installed. This column is of conventional design with accessories adequate to produce either a butane-propane L.P.G. or commercial propane as an overhead product, and natural gasoline as a kettle product.

Pumps

Lean oil and cooling water circulation duties constitute the main pumping loads for the plant, and these services are handled by gas-engine driven centrifugal pumps.

The three pumps required respectively for side-circulation of rich-oil at the rich-oil rectifier, feeding rectifier bottoms to the stripping still, and recycle of partially stripped oil through the still fired-heater, are operated in tandem by a single steam-turbine. The exhaust from this turbine is utilized for reboiler service at the fractionator. By proper adjustment of its exhaust pressure, this turbine's steam consumption can be closely balanced with the reboiler-steam requirements of the fractionator.

The fractionator feed service, and the reflux services for both the stripping still and fractionator, are handled by simplex steam pumps. The exhaust from these reciprocating units, together with that of the boiler feed pump, supplies the stripping steam requirements of the still—which operation simultaneously disposes of the lubricating-oil contamination of the exhaust steam from these reciprocating units.

All water condensate from the stripping-still draw-offs and product-fractionator reboiler is collected and returned to the boiler-feed system. Available raw water is of bad quality, scarce, and expensive—hence the high degree of steam recovery thus achieved is of real monetary value at Cymric.

Cooling System

An aerial cooler employing two separate engine-driven fans is utilized for removing the high temperature heat from the still overhead—with the lower temperature heat from this stream, together with that of the lean-oil product fractionator streams being removed at a conventional atmospheric type cooling tower. This cooling system arrangement effects an appreciable saving in expensive water consumption, and eliminates any high temperature stream being cooled in the cooling tower.

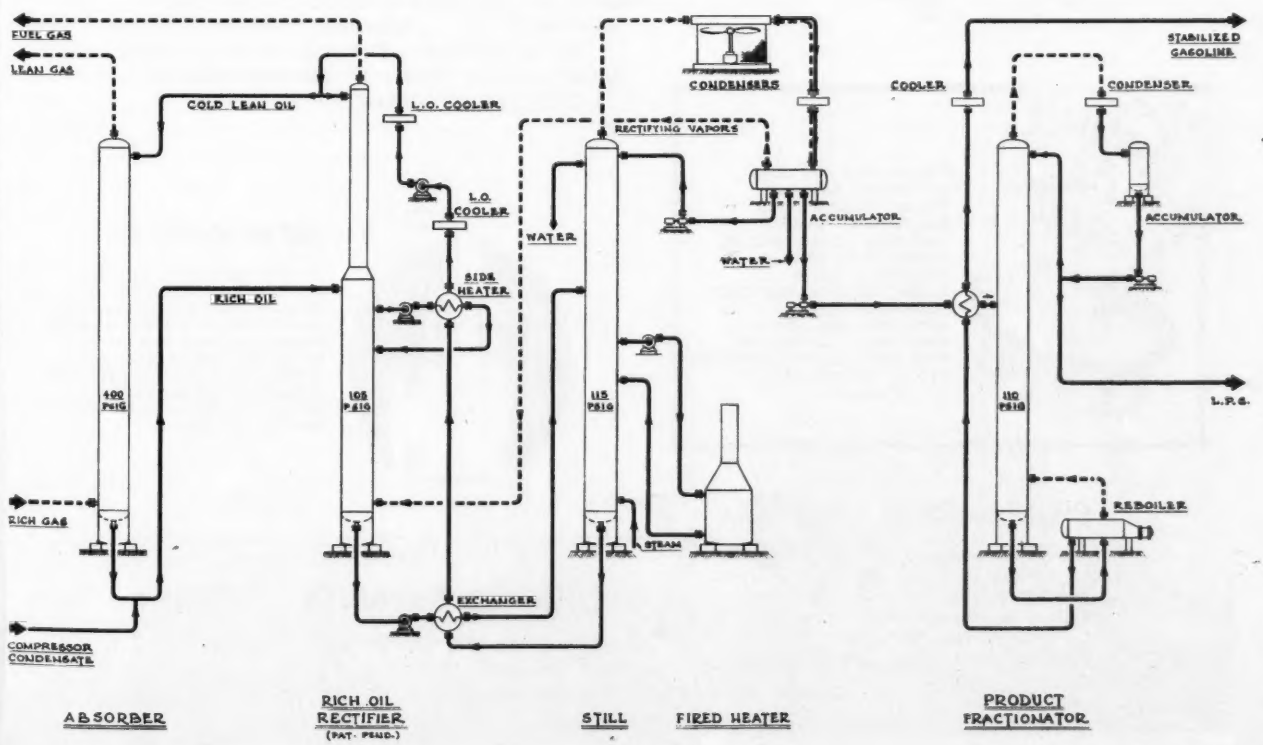
A steel-plate water-basin was installed on an elevated grade for the cooling tower for a further saving in over-all cooling system cost.

Cooling tower water is treated with sulfuric acid for pH control, a commercial algicide (Moberg) for algae control, and with chromates (Orocol) to control corrosion.

Boiler Plant

The plant is provided with three second-hand 104 horsepower, 250# oil-field type fire-box boilers. This

CYMRIC ABSORPTION CYCLE



UNIVERSAL REFINING FACTS

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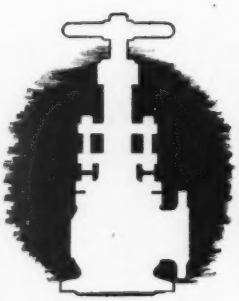
CORPUS CHRISTI—CANOL—EDMONTON! THAT'S THE RECORD LOGGED BY ONE UOP-DESIGNED UNIT. ORIGINALLY INSTALLED IN A TEXAS REFINERY, THE EQUIPMENT IS STILL IN OPERATION TODAY AFTER THOUSANDS OF MILES OF TRAVEL.

MOTOR FUEL WAS NEVER SOLD UNDER A NAME LIKE THIS BUT "HAMMER BRAND" WAS THE TRADE TERM FOR SOME STRAIGHT RUN GASOLINE BECAUSE OF THE KNOCK IT PRODUCED IN AUTOMOBILE ENGINES. UNIVERSAL PIONEERED THE DEVELOPMENT OF CONTINUOUS CRACKING OF HEAVY CHARGE STOCKS THAT MADE ANTI-KNOCK FUELS AVAILABLE AND PUT "HAMMER BRAND" OUT OF BUSINESS.



NEW ANGLE!

IN THE EARLY DAYS OF REFINING, GLOBE OR SLIDE VALVES FOR HIGH PRESSURE DROPS REQUIRED CONTINUAL MAINTENANCE. THAT'S WHY UNIVERSAL ENGINEERS WORKED WITH VALVE MANUFACTURERS TO DESIGN THE STREAMLINED ANGLE VALVE FOR HIGH PRESSURE DROPS AND EROSIVE SERVICE ... STANDARD THROUGHOUT THE INDUSTRY TODAY.

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Universal Service Protects Your Refinery

boiler capacity is considerably in excess of that needed for the plant operation. In fact, one boiler can carry the plant load at well under normal rating, and one boiler constant fired as standby. The cost of the installed boiler plant was less than that of new equipment for the design load, thus providing a maximum of flexibility with a minimum of boiler maintenance.

An elevated atmospheric skimming tank is used for final separation of any light hydrocarbon contaminate of the reclaimed stripping-still and fractionator water condensate—with the streams from the stripping still draw-offs traversing coal-packed coagulators ahead of the skimming tank. Water from this skimming tank, plus treated make-up water, is introduced into a conventional atmospheric feed-water heater through which a very small "balancing" surplus of exhaust-steam from the plant is routed.

All boiler make-up water is Permutit treated.

General Plant Arrangement

To keep capital investment as low as possible, serious attention was paid to the design of an equipment layout which would be "compact, but not congested." This was achieved by the use of overhead pipe-ways, location of the tandem-operated pumps adjacent to and between the respective columns which they served, use of three control boards located on a common operating aisle adjacent their respective units, and placement of interchangers and pumps on both sides of this common operating aisle, rather than using a single-sided operating front. Finally, while fire hazard requirements made it necessary to locate the fired-heater and boilers some little distance from the operating plant area, the water treaters, feed-water heater, and boiler feed-water pumps were located considerably closer to the main processing area.

Operator protection from the weather, and housing for an operator's desk and storage of operating and instrument records, is provided for by a small control-house fronting on the main operating aisle and centrally located thereto. This house has three sides of glass which allows the operator to observe the main equipment while seated at his desk.

Product Storage and Disposal

42,000 gallons of storage are provided for L.P.G. and 38,000 gallons for natural gasoline. A truck loading rack with both L.P.G. and gasoline loading facilities is provided, as well as facilities for shipping gasoline by pipeline.

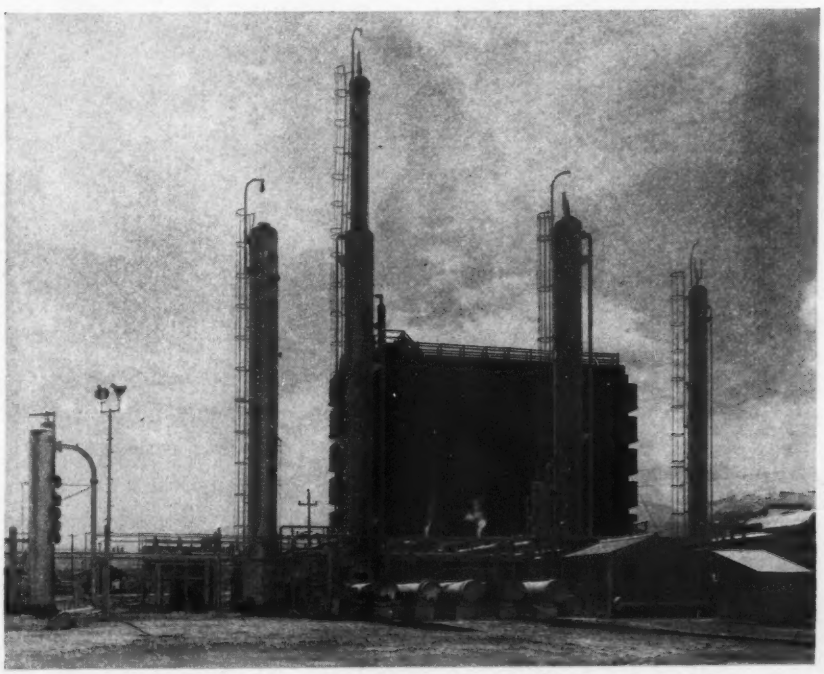
Operation. Two complete tests have been run on the Cymric Plant, and two other tests on the absorption section only. Pertinent absorber data from these tests are shown in Table 1. These tests cover a variation in gas load from some 37,500 MCF/D to 26,300 MCF/D, with a corresponding variation in oil-gas ratio from some 7.60 gallons/MCF to 11.84 gallons/MCF. Propane absorption has ranged from 21.8% to 44.4%, and iso-butane absorption from 48.3% to 88.1%. An additional column has been added to Table 1 for comparison of the test operations with the expected operation when the rich-gas intake rate is reduced to 15,000 MCF/D and the propane absorption increased to some 80%.

Figure 2 presents the results of the four plant tests in a Straight-Line Chart plot. The steepness of the respective operating lines and their small differences in slope (representing an "extraction efficiency" spread of only 5% in 61-66%) indicate excellent absorption performance for a wide range of loading. In fact, these particular tests represent the highest 400-500# absorber efficiencies of which we have any record.

Performance of the rectifier-reabsorber unit determined from the plant tests is shown in Table 2. High propane retentions, coupled with essentially complete deethanization while at the same time maintaining a low temperature on the lean oil to the coolers, is the interesting feature of this table. Incidentally, as you can see, the "17.2%" of lean oil over the reabsorber on the second test was a little too low to effect a full 90% recovery of propane.

The stripping still operates with a heater outlet temperature of approximately 550°F. Plant lean oil is maintained at 180-185 molecular weight, with a 340°F Engler initial and a 30-40 millimeter water vapor pressure. Average gasoline end-point is 285°F, with an average 90% point of 225°F. 0.14 pounds of stripping steam are used per gallon of lean oil. Less steam could be used and has been used in the past. However, since all steam used is exhaust steam, and since the

(Continued on Page 45)



WAUKESHA POWER PUMPS

13,000,000 BARRELS!

• In the LION OIL COMPANY pipe line station at Magnolia, Ark., these three 145-GKU Waukesha Gas Power Units are working about 16 hours a day—driving 5 x 10 Gardner-Denver pumps operating at 700 pounds pressure. These Waukeshas have been in operation for four years or more, and during that time they have pumped 13,000,000 barrels.

That's real, rugged dependability. And it's built right into this six-cylinder, 5¼-in. x 6-in., 779 cu. in. Model 145-GKU with its hard alloy valve seat inserts, removable wet sleeve cylinders, gear-driven oil and water pumps, thermostat controlled cooling, precision bearings, husky 7-bearing crankshaft. For all the details—send for Bulletin 1225.

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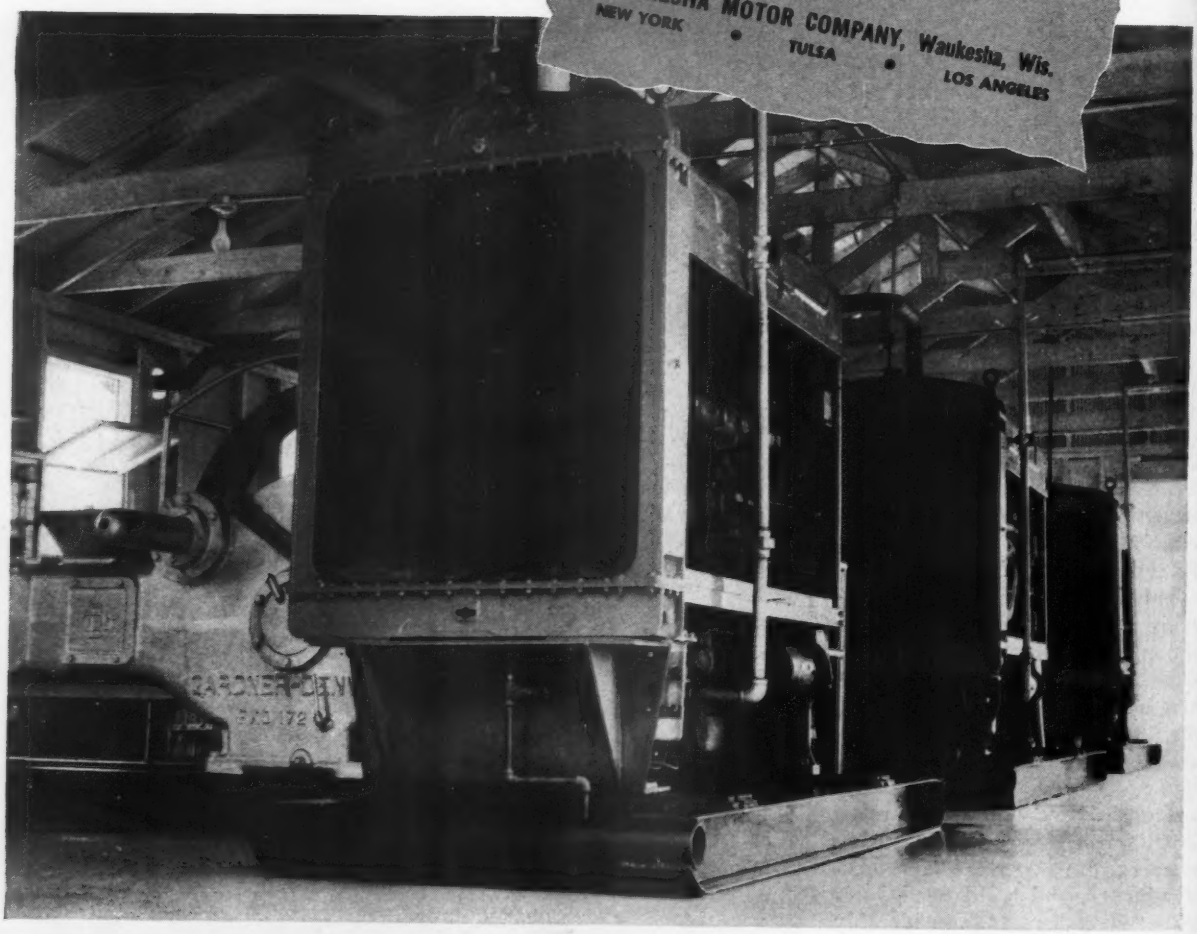

WAUKESHA ...Gas Power
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Rocky Mountain NEWS

Colorado—Idaho—Montana—New Mexico—Utah—Wyoming—Western Canada

Increasing concern of Rocky mountain operators over marketing problems was voiced by Glenn E. Nielson, president of Husky Refining Co., Cody, who last month was reelected president of the Rocky Mountain Oil and Gas Association at the annual convention in Denver.

Noting that Rocky mountain oil producers ran into a "tough situation" during 1949 when the supply of petroleum came into balance with demand, Nielson declared:

"Our sparse population is insufficient to consume our production. Due to lack of adequate pipeline or water transportation facilities, we are further removed from markets (dollar wise) than any other oil producing area in the United States. I am sorry to report that instead of premiums being paid for crude oil as in 1947 and 1948, we now have potential production of 75,000 to 100,000 barrels per day shut in because of lack of markets. . . .

"Our local markets are fully supplied, and when we attempt to ship our crude by rail either east or west to consuming centers, we are not competitive with other producing areas served more adequately by pipeline or water transportation."

Actual production in the Rocky mountain states, however, was running only about 3,000 barrels daily under a year ago (comparing September figures). There was a decrease of about 25,000 barrels per day in Wyoming—mostly heavy black asphaltic crudes—and this was largely offset by increases in Colorado and Montana. Most of the increase was in stepped-up production at Rangely field to serve Salt Lake refineries.

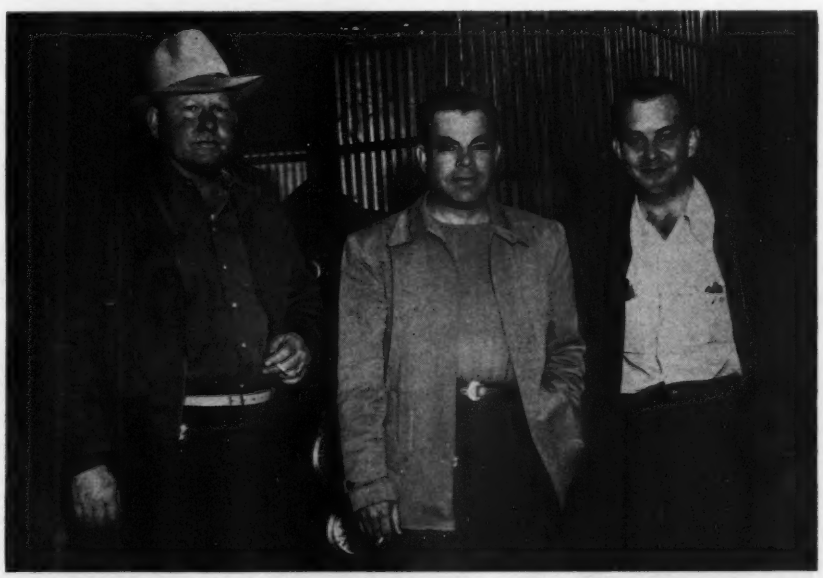
September production in the Rocky mountain states was estimated at 139,000 barrels for Wyoming, 64,300 bbls. for Colorado, 25,000 for Montana and 2,600 bbls. for Utah, making a total of 230,390 bbls. per day for the region.

Marketers were busy concentrating on new outlets, too. Standard of California was busy laying a new pipeline from Salt Lake to Boise and eventually to Spokane, while Frontier Refining of Cheyenne and Denver was surveying a proposed products line from Cheyenne to Omaha to absorb some of the shut-in light oil production in the fast-growing Fiddler Creek area of northeastern Wyoming. There were rumors of other pipelines in the offing.

In his annual report to the Rocky Mountain Oil and Gas association, Nielson observed that many significant discoveries of oil and gas pools have been made in the past year, despite the fact that less than half the number of drilling rigs have been operating in the region in 1949, compared to a year ago.

"This area remains an attractive one for oil and gas exploration," he told the 400 oil men and visitors gathered for the Denver meeting. "An important operator in our industry told me recently that the dry hole density in the Rocky mountains is lower than it is in any other oil-producing area in the United States; that exploration and drilling costs were higher in the Rockies than in the Mid-Continent or Texas, and that additional taxes or regulations here could easily change the present attractiveness of this area."

Statistics for the first 10 months of 1949 bore out Nielson's remarks on the success ratio of wildcat drilling. Wyoming had a percentage of 23, Montana 19, Colorado only 4, and Utah 6.



The deepest dry hole ever drilled in Fremont county, Wyoming, was completed by Exploration Drilling Co. for British-American at Whiskey Peak recently. Left to right: Russ Williams, Tulsa, drilling superintendent for Exploration; Bill Evelyn, drilling superintendent for British-American, and Phil Cushing of National Supply Co. The 13,226-foot test was drilled with a National 125 rig.

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1949

And although half of the drilling rigs were "unemployed," during most of the year, total footage drilled on wildcat wells in the Rockies had already exceeded the footage figure of 1948. This was partly due to the rapidity of drilling operations in Fiddler, West Fiddler and Hay Creek areas of Weston county, Wyoming, where the average time for drilling a well is only three to four weeks.

Important oil discoveries of the year were made in the Julesburg Basin of Nebraska, the Uintah Basin of Utah and the San Juan Basin of New Mexico, and more recently in the Glenrock area on the south side of Wyoming's Powder River Basin.

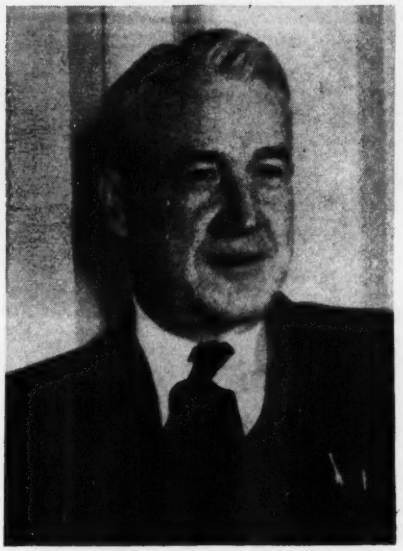
In Wyoming there were 28 wildcat discoveries and/or new pays, nine in Montana, one in Colorado, one in Utah, three in northern New Mexico and one in Nebraska.

Leading discoveries in Wyoming included the Glenrock area in Converse county, Murphy Dome and Little Sand Draw in Hot Springs county; Beaver Creek and Riverton Dome, Fremont county; Hatfield, Carbon county; Sussex field, Johnson county; South Cole Creek, Converse county, and Little Buck Creek, Niobrara county. A rapid extension drilling campaign pushed the daily production potential of the Mush-Creek-Fiddler-West Fiddler Creek areas from 3,000 bbls. daily to more than 20,000 daily during the year.

The Rocky Mountain Oil and Gas association passed resolutions endorsing the appointment of Oscar Chapman as Secretary of the Interior and opposing any action for a competitive leasing on federal lands not known to be of value for oil or gas.

New officers include Vice Presidents C. S. Hill, Denver independent; J. F. Cullen, consultant for Stanolind at Casper, and M. H. Robineau, Frontier's president. Jack Manning of Cody was elected treasurer and C. A. Lake executive secretary of the association.

Prominent speakers at the convention included Walter S. Hallanan, chairman of the National Petroleum Council and president of Plymouth Oil Co., of Pittsburgh;



Harold H. Healey, Rocky mountain division manager for Ohio Oil Co., is shown at his desk in the company's new million-dollar, four-story office building in Casper, Wyo.

James H. Pipkin, assistant to the chairman of the board, The Texas Co. (who pleaded for unity within the oil industry, especially in resisting encroaching socialism), and H. H. Hewetson, chairman of the board, Imperial Oil Ltd., of Toronto.

The latter traced development of the oil industry in Canada, beginning with the discovery by Imperial of light oil in the Devonian formation at Leduc, in Alberta, two years ago. Since then, strikes have been made at Woodbend, Redwater, Golden Spike and Stettler, with the result Alberta has become one of the most active oil areas on the American continent.

Hewetson said reserves already total more than a billion barrels, "far in excess . . . of the quantity necessary to meet local demands of the Canadian prairies for years to come."

He declared Canada's growing oil reserves were extremely important from the standpoint of hemispheric defense and pointed out that trade between the U. S. and the dominion should increase as a result of Alberta's new importance in oil. He traced the development and route of the $90,000,000 pipeline from Edmonton to Superior, Wis., now under construction. This pipeline, he explained, will feed oil to Superior for trans-shipment to refineries in eastern Canada, and will be completed by the time shipping opens on the Great Lakes in the spring of 1951.

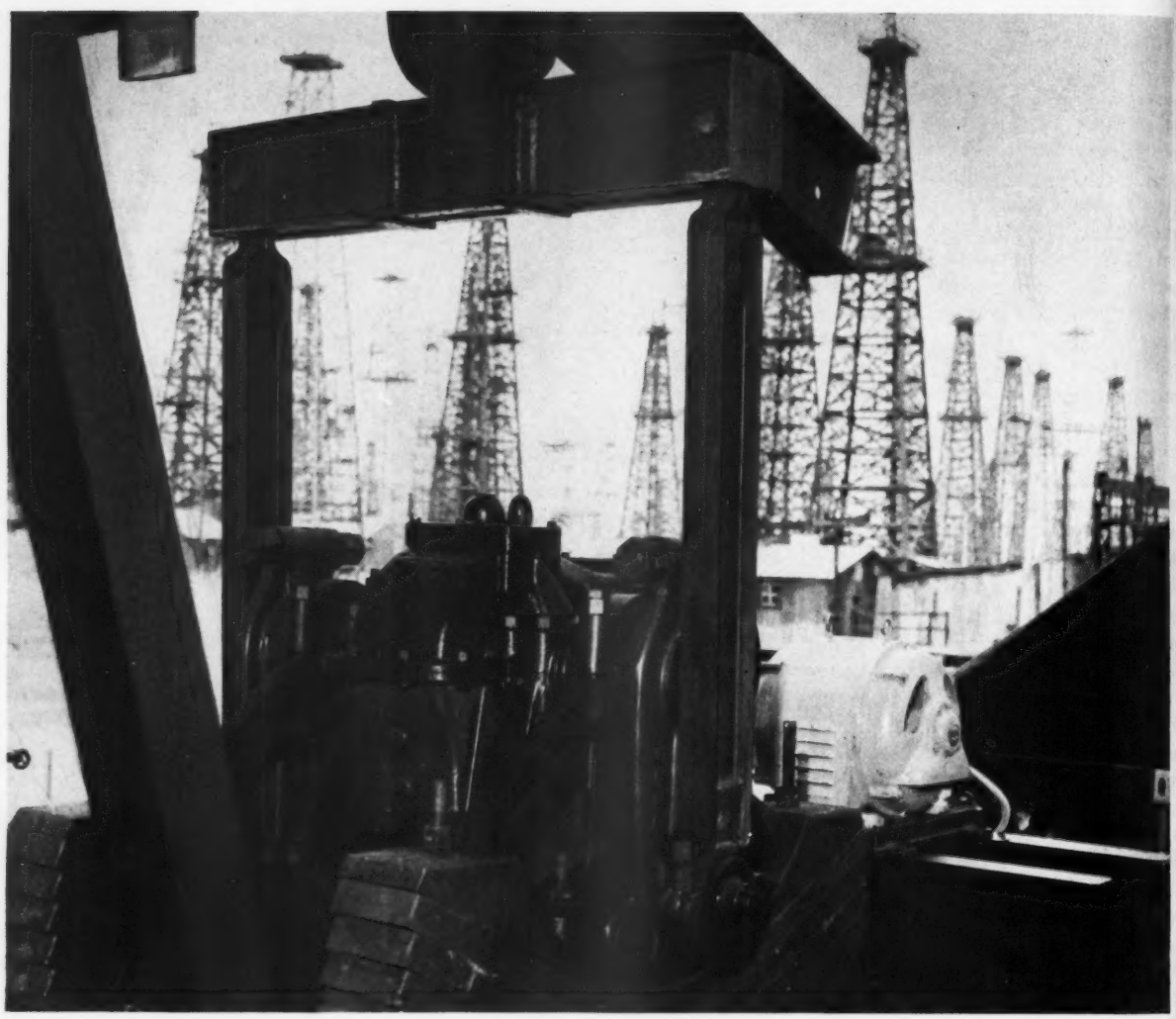
Storm signals pointing to a new series of battles in Rocky mountain legislative halls over severance tax proposals were hoisted when Nielson brought up the subject at the RMOGA meeting. He recalled the fight waged by the association on the severance tax, "when we had our backs to the wall both in Wyoming and Colorado, and where the oil industry in the Rocky mountains was threatened with a five to ten million dollar additional load. I intended to tell you how we helped to hold the line on additional taxation on drilling equipment. I wanted to tell you especially about our meetings with the Stockgrowers association to consider ways and means of working together whereby we could help each other to sell the Free Enterprise way of life more effectively to the public. I wanted also to tell you about all the fine work that has been done this year. It has been a most wonderful example of individual initiative and untiring effort."

Orlo E. Childs of Phillips Petroleum Co., was elected president of the Intermountain Association of Petroleum Geologists at the recent annual meeting in Salt Lake City. Other officers are Robert J. Minton, Phillips, vice president; George Farmer, U. S. Smelting and Refining, secretary, and Louis F. Wells, Sun Oil Co., treasurer. The association was founded in Salt Lake City last April.

Wyoming

Big news in Wyoming was the Glenrock oil boom, which caught most of the lease hounds with their "leases down." Steelco Drilling Co., an independent backed by Chicago interests, plucked a 160-acre lease on the outskirts of the town from Mrs. Mattie McDonald, oldtime Glenrock resident who insisted on a quick drilling commitment. Earlier she had refused to lease to majors who declined to specify a drilling date.

Steelco punched a hole in short order to the Muddy sand at 7,210 feet and logged 25 feet of soft, well-



Consider electric equipment from all angles!

In any business, the choice of equipment rests on a variety of considerations. Owners and workers may have different reasons for their preferences. They do quite often in the oil business, for one—but the difference is only in reasons. Electric equipment is the choice of both owners and workers.

Owners look for lower investment, lower maintenance cost, longer life, operating cost adjustable to production requirements. Workers in the field and refinery give primary consideration to operational advantages—compactness, light weight, reduced hazard, push-button or automatic control.

On either set of requirements, electric equipment wins the nod. That is why it is preferred for well pumping, pipeline pumping and refinery operations.

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saturated sand. Light green crude of about 40 gravity flowed with high pressures in a 15 minute drill stem test, but no gauge was taken. The discovery caught the operators by surprise; no storage had been provided. Oil scouts made an early estimate of 3,000 barrels per day potential for the well.

Casing, 5½ inch, was run through the sand and perforated for a production test and Steelco, meanwhile, staked out another location about one-half mile due east of the discovery.

Phillips Petroleum, which discovered the South Cole Creek field northwest of Glenrock a year ago, had already leased most of the land surrounding the town of Glenrock as well as a majority of the town lots, streets and alleys. The Steelco test proved the acreage.

Tom Hynes of St. Louis, toolpusher at the rig and a vice-president of the firm, said the second venture east of the discovery will test the deeper Dakota and Lakota sands, as well as the proven Muddy sand. Tests will also be made in the Frontier sand around 6,200 feet, which showed gas in the discovery well but was not tested.

The discovery is located on a seismic high on the north outskirts of the town of Glenrock, and is only one-quarter mile east of Continental Oil Co.'s 10-acre refinery site in Glenrock. Continental is even considering drilling a well on its refinery grounds, it is reported. Phillips has a large acreage spread north of the town, while Continental has blocked out 10,000 acres southeast of Glenrock.

The discovery has stimulated leasing and exploration along the southern boundary of the big Powder River Basin and started another run on the district land office at Cheyenne. Jammed also was the county clerk's office in Douglas, county seat of Converse county.

Tax title lots which went for $1 to $25 each a year ago were bringing $150 and $200 each, although much legal work might be required to secure clear titles.

Ross Gardner, veteran lease broker and attorney in Glenrock who has dealt in leases throughout the Rocky mountain region for many years, was vacationing in Florida when the wave of oil excitement engulfed the town. He had not acquired as much as a lease in the town of Glenrock, although his office has been setting right over an unsuspected pool all of the years.

R. W. McCanne, division geologist for the Ohio Oil Co., in the Rocky mountain region, directed exploration which led to the firm's discovery of the first commercial oil pool in western Nebraska this year. Ohio is now drilling another wildcat well about six miles south of the Gurley field, near the town of Sidney.

A large share of the oil rights surrounding Glenrock has been held by the McNeill Investment Co., a firm which took over the assets of the old Glenrock Coal Co. The rights were acquired in the early day coal mining period. Lawyers will be kept busy for years straightening out titles and mineral deeds dusted off with the discovery of oil in the area.

Mildred Barber, town attorney, peered over a stack of legal documents which buried her desk in an office at the main downtown business corner and predicted:

"There's enough legal work here to keep the lawyers busy for at least 25 years."

She brushed a hand wearily over her damp forehead and plunged again into the work of examining titles.

Jack Steele of Chicago, who caused all of the furor by drilling a well before any unit plans of operation could be evolved, was excited over the discovery. He had made his money in a whiskey distillery in Kentucky, a rum distillery in Puerto Rico and a wine business in Chicago before turning to oil drilling. His two previous ventures in Wyoming were unsuccessful. One, at Bolton Creek in Natrona county, was a small black oil find with no market prospects. The other was a dry hole attempted extension of the Big Muddy field east of Glenrock.

Marketing prospects are considered good for the new field. Production is right alongside the Stanolind crude oil pipeline from Casper to Kansas City. The oil, which tested 39.8 gravity in a trial run at the nearby Continental refinery, is of the quality preferred by refiners. The Conoco plant, however, already has all of the crude it can use from the veteran Big Muddy field, and the new production probably will have to depend on export markets.

Meanwhile hopes for a new gas discovery in southwestern Wyoming were dashed when Stanolind's deep wildcat well at Canyon Creek failed to make commercial gas production. Drilled to total depth of 13,321 feet in Dakota sand (the producing horizon at Church Buttes, 75 miles to the north), the venture tested a maximum of 1,125,000 cubic feet of gas daily thru 24/64ths inch choke. Flowing pressure dropped rapidly during the tests. There was no condensate accompanying the gas. Brinkerhoff Drilling Co. started dismantling the rig at the end of November.

Continental Oil Co. is moving in tools for its new prospect in the Meadow Creek block one township south of the rapidly developing Sussex field in Johnson county, Wyo. The test will be to Lakota sands around 7500 feet. In the Sussex field Continental recently completed Well No. 9 for initial production of 1,500 bbls. oil per day, the best producer in the field.

American Liberty of Dallas drilled three failures south of the field. This firm has joined with Delhi Oil Corp. to drill a new test in section 35-42n-78w, about midway between Meadow Creek and the east producing area at Sussex.

Why this isn't your 1950 model car

This gasoline buggy, now safely tucked away in dusty photograph albums, was quite a car in its day. It buzzed along at 20 miles an hour, had a jaunty, rakish air, and the people who could afford to buy one thought it was perfectly wonderful.

In fact, it was so good it might still be the car you drive but for one reason. Competition. Healthy competition among both automotive and oil companies that resulted in constantly better, lower-cost automobiles and steadily improved oils and gasolines.

For one example: Here at Standard of California, we've pioneered literally thousands of improvements in gasolines, motor oils and other petroleum products since the days of the horseless carriage. Those you use in your car today are unsurpassed anywhere. The world's first service station built by Standard in 1907 has grown, including outlets of all companies, to a network of more than a quarter of a million stations across the country.

This progress, spurred by competition, will not stop. Just since the war, we've spent more than $450,000,000 in plants and facilities to serve you better.

STANDARD OIL COMPANY
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plans ahead to serve you better

Another deep test has been spudded by Trigood Oil Co. and Fred Manning in the McCullough Peak area in Park county. The venture is scheduled to test formations below 10,000 feet.

British-American has spudded and shut down for the winter at the Green Mountain venture in 2-28n-94w, Fremont county. The well is planned as a 6500 foot test of the Nugget sand on a unitized block adjacent to Sinclair's Happy Springs venture.

William Hamm, Jr., scion of the well-known brewing firm, is drilling below 2000 feet on a Muddy sand test in the West Stroner area of Campbell county (27-55n-69w). The goal is anticipated around 5200 feet.

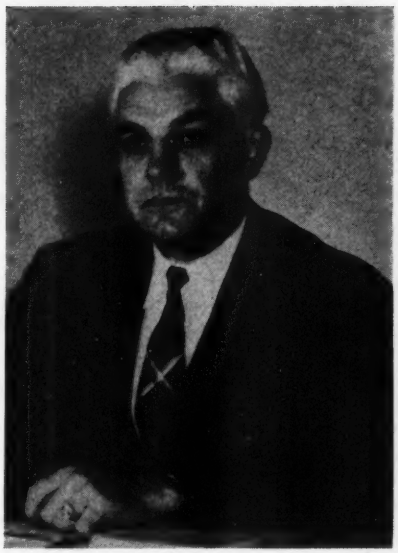
Westates Petroleum has abandoned its Table Hills wildcat in Carbon county at 7361 feet in the Tensleep, with no shows reported.

Pure's deep test at Badwater in Natrona county was drilling below 12,600 feet on the way to Frontier sands of Upper Cretaceous, which were productive below 14,000 feet at the West Poison Spider discovery well 35 miles to the southeast. Tide Water Associated's Poison Springs wildcat, southeast of West Poison Spider, was approaching 13,000 feet—with no shows reported.

At Church Buttes, Mountain Fuel Supply is below 13,500 feet on the first deep oil test to the Nugget sand in the big gas structure. Mountain Fuel has five wells completed to the Dakota formation between 12,500 and 13,000 feet, with the gas marketed mostly in the Salt Lake and Ogden area.

Colorado

Pure Oil Co. has abandoned its interesting wildcat in the Horsefly area of Montrose county after swabbing only two barrels of sulphur water per hour following acid treatment. The well was drilled to 5035 feet in section 14-46n-13w on the southwest side of the Uncompaghre Uplift, scene of active leasing for the past two years. Northwest of Horsefly, Continental Oil Co., J. M. Huber Corp., and Lion Oil Co., are unitizing the Nucla block, where a wildcat is planned early in 1950.



W. Hume Everett, veteran attorney for the Ohio Oil Co. in Casper, recently drew the ire of the Wyoming-Utah Labor Journal and others when he denounced advocates of a severance tax on oil as "taxhoppers," and urged that the proposed special session of the Wyoming state legislature devote itself to grasshoppers, which the ranchers want to control. Everett said in a speech before a Casper service club that "these tax grabbers and proposers are still laboring under the mistaken delusion that the people of Wyoming want to socialize Wyoming industries commencing via a severance tax on oil."

The H. E. R. Drilling Co. has cemented seven-inch casing at the No. 1 Marr-Thomas in 1-38n-19w, an east extension at Dove Creek in Montezuma county. The operator plans to acidize and test a dolomitic zone which showed some gas around 6135 feet. The venture is about three miles east of the Dove Creek discovery made by Byrd-Frost, Western Natural Gas et al.

The fourth well completed by Texas and Frontier Refining at Maudlin Gulch in Moffat county was good for 288 barrels daily on the pump, with production coming thru preforations opposite the Sundance below 6788 feet.

Amerada was last reported drilling below 3950 feet at Asbury Creek in Mesa county after testing a weak blow and recovering 120 feet of salt water between 3504-3520 feet. Earlier the well tested gas with carbon dioxide content in upper sands.

Idaho-Colorado Oil Co. gave up the Elk Springs test in Moffat county at 8886 feet. The well in 12-4n-99w tested water in the Weber sand.

A total of 1040 acres within the known geological structure of the Wilson Creek field in Rio Blanco county will be offered for lease at competitive sealed-bid sale, it was announced by Marion Clawson, director of the Bureau of Land Management. Bids must be submitted to the director's office in Washington on or before 1 p.m. Dec. 14, 1949. Oil was discovered in the Wilson Creek field in 1938, with production from the Morrison sand. Since then the field has produced more than 14,000,000 barrels and is the largest field next to Rangely in Colorado.

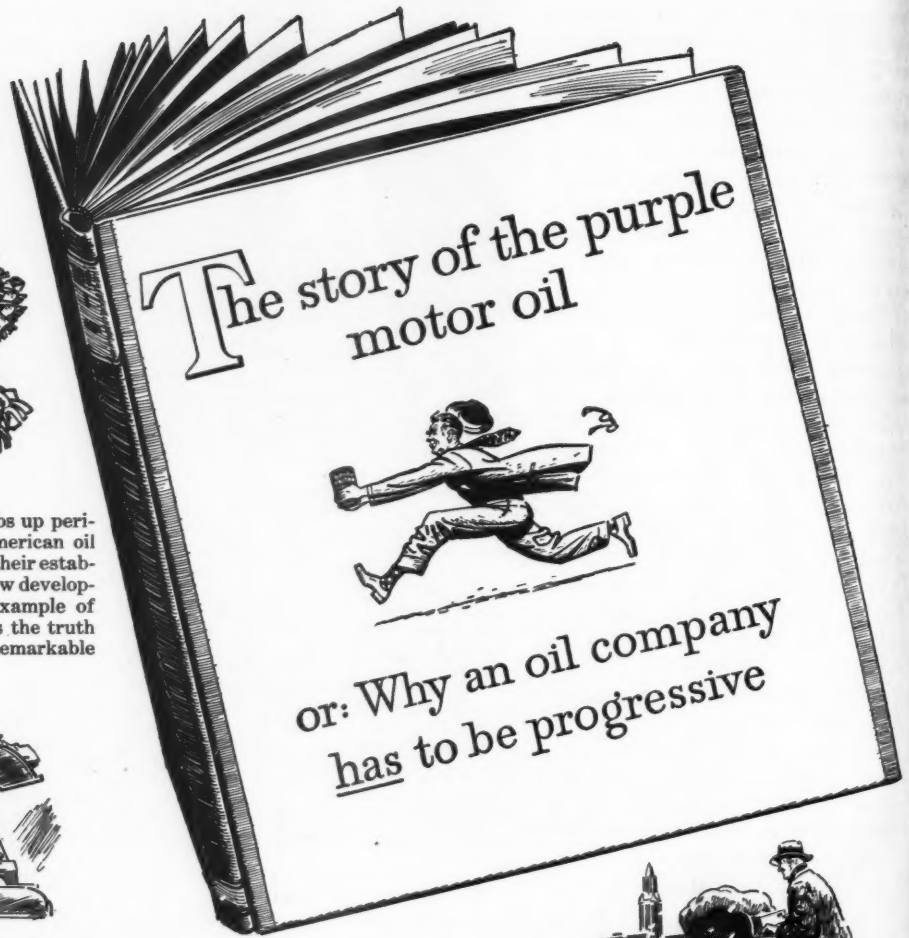
Fringes of the Rockies—

A revival of leasing activities is reported in Idaho. One major is reported leasing fee lands in Power and Oneida counties in the south-central part of the state. Leasing of federal lands started in the area more than a year ago. Plans for a pre-Pennsylvanian test in Oneida county (10-14s-30e) have been announced by Phillips Petroleum and Utah Southern Oil Co.

In western Nebraska, Ohio Oil Co. ran casing and prepared to complete its No. 3 W. T. Knievel, a northwest extension of the Gurley pool near Sidney. The well found a new pay in the third bench of the Dakota. Other wells in the field are productive in the First Dakota.

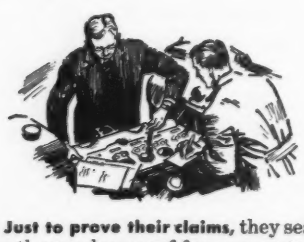
Six miles southwest of the Gurley pool, Ohio is drilling below 2500 feet at the No. 1 Cruise in 7-14n-49w, its new wildcat in the Huntsman area. The well is planned as a test to granite around 8000 feet.

Two wildcats in North Dakota have been abandoned. Karnes et al gave up the junked hole at No. 1 Kline in the Minot area, Ward county, at a total depth of 8435 feet. The California Co. paid for deepening the test in exchange for geologic data. A Madison top was reported at 5640 feet. Union Oil of Califor-



1. One old wives' tale that bobs up periodically is the story that American oil companies protect the sale of their established products by keeping new developments off the market. An example of how far this fairy tale misses the truth is the case of Union Oil's remarkable purple motor oil.

2. Shortly after the war, we introduced our new post-war motor oil, Triton. By all standards, Triton was unexcelled. In fact, it was so good we told people they could safely drive it 6 months between drains if they chose. Consequently, we thought our oil program was set for several years. But 12 months later our research engineers came up with a purple motor oil for passenger cars which they said was even better.



3. Just to prove their claims, they sealed it in the crankcases of four new automobiles and drove them continuously up and down the Pacific Coast for 30,000 miles! At the end of the test they opened up the motors and showed us the results: The engine parts were as good as new and the oil—by every analysis—showed no more deterioration than ordinary motor oils exhibit after 1,000 miles.

4. That posed a question. Should we hold this new purple oil off the market for a few years and protect Triton, or put it on sale immediately? The answer was that we had no choice. For we were in *competition.* If we didn't put this purple oil on the market as soon as possible, some of our competitors might develop a comparable product and beat us to the punch.

5. As a result we introduced our purple oil to the motorists of the Pacific Coast under the brand name of Royal Triton. Royal Triton was not only an overnight success with our own Western customers; visitors from the East even took it home with them *and continued buying it by mail.* Consequently, we've had to expand our manufacturing facilities and lay plans for marketing it throughout the country.

Moral: Next time anyone tells you oil companies hold improved products off the market, please tell him to see us.

UNION OIL COMPANY

OF CALIFORNIA

INCORPORATED IN CALIFORNIA, OCTOBER 17, 1890

This series, sponsored by the people of Union Oil Company, is dedicated to a discussion of how and why American business functions. We hope you'll feel free to send in any suggestions or criticisms you have to offer. Write: The President, Union Oil Company, Union Oil Building, Los Angeles 14, Calif.

nia, Hancock Oil Co., and Signal Oil & Gas Co. abandoned a stratigraphic test in 29-158n-62w on the northeast side of the Williston Basin in Ramsey county. The well was drilled to 3222 feet. Union is expected to start a new venture in the spring of 1950.

Montana

Weekly meetings of the Montana oil scout check have been transferred from Lewiston to Billings, it was learned from Leo Sass of Carter Oil Co., president of the check. Other officers of the scout check are Leonard Scott, Shell, vice president, and M. Johnson, Amerada, secretary-treasurer.

Amerada's Whitetail Creek wildcat in Carter county has been abandoner after tests of the Newcastle or Muddy sand showed water, and deeper zones were unproductive.

Texas Co. is pumping around 55 barrels of oil with a trace of water at the new Sumatra wildcat discovery in Rosebud county. Production is from the Basal Amsden sand at a plugged back depth of 4415 feet.

Location for a joint Devonian test in the Agawam area, Teton county, has been made by General Petroleum, Union of California and British-American. The well in section 19-26n-3w is four miles southeast of GP's recent Agawam failure, which found some oil in the Madison. General Pete is shut down on its Collins wildcat in 12-24n-2w, Teton county, which had shows of oil in Madison cores but failed in Devonian.

First wildcat test for Texas Pacific Coal and Oil Co. in the Rockies will be a venture in the Chimney Butte area, Musselshell county. The well in 11-7n-27e will be an Amsden test. The company has had production in the Kevin-Sunburst field for many years. Its first venture will test an area east of the Melstone field and south of Big Wall and Ragged Point fields, which produce from Amsden.

Utah

Crooked hole difficulties are plaguing Carter Oil Co. on the Strawberry unit in Wasatch county. The firm has set five whipstocks on the wildcat after plugging back from 2755 feet. At one time the hole was reported seven degrees from vertical. Previous delays were caused by circulation difficulties in the well, which started drilling last July.

California and Utah Oil Co. have abandoned the Vernal area wildcat north of the Ashley Valley field in Uintah county at a depth of 6133 feet. No shows were reported for the venture in 12-5s-21e.

Sun is drilling below 3700 feet in the Brush Creek wildcat in 26-4s-22e, Uintah county, northeast of the Ashley Valley field. Drilling is scheduled to the Weber sand below 4500 feet.

California Co. was reaming with total depth 2025 feet at the Gusher Unit southeast of the Roosevelt area in Uintah county. The well commenced drilling Nov. 13.

Ventura Well Spuds

Spudded and drilling on down is the Samuel Bennett, Operator, Bennett-Foster No. 1 well in the Ventura Avenue field on Sec. 28-3n-23w. British-American Oil Producing Company's Hartman No. 17 on Sec. 21-3n-23w has reached 8500 and continues to bite the earth deeper. Shell Oil's Taylor No. 309 on Sec. 29-3n-23w is a completion at 8295 ft. It put out initially 676 barrels of oil and 342,000 cubic ft. of gas. Wright & Lohman's Barnes Sparks No. 22 on Sec. 21-3n-32w is drilling at 6785 ft. The name Wright on this well's banner denotes the interests of Warren Wright, head of Calumet Baking Powder Company in Chicago and a turf figure of national repute.

Cholame Try Quits

Three miles northeast of Cholame, Franco Western Oil Company Jack No. 1 explorer on Sec. 8-25s-16e, San Luis Obispo County, has been written off as a duster to 1440 ft.

Devils Den Try Drills

Having completed successfully its Devils Den Fee No. 1, Universal Consolidated is now drilling its No. 2 on Sec. 23-25s-18e in the Devils Den area. The No. 2 is making hole in the shallower formations. No. 1 on the same section came in from 2311 ft. for 75 barrels a day from the zone opened up a couple of months ago by a well drilled by Honolulu Oil Corporation in the sector.

Antelope Hills Wildcat Staked

One mile west of Antelope Hills production and two miles southeast of Independent Exploration's Bolton No. 83 gas well, Fred L. Williams has location staked for his No. 4 well on Sec. 1-28s-19e, Kern County.

Caliente Try Starts

Starting on Sec. 36-30s-29e in the Caliente Creek sector of San Joaquin Valley is the Western Gulf Oil Company Di Giorgio No. 44-36 wildcat well.

Ground Leased At Old River

Hancock Oil Company has added to its holdings in the Old River area by leasing 80 acres in Secs. 3 and 10-31s-27e. The ground is east of Gosford production. In the southeast corner of Cuyama Valley, General Petroleum has leased 320 acres in Secs. 29 and 32-10n-24w. The ground adjoins the R. B. Jackson property.

San Benito Well Works

The latest word from the Regent Oil Company Baumgartner No. 2 on Sec. 26-17s-9e in the San Benito area of San Benito County indicated the project showed considerable salt water under strong pressure. Total depth is 5159 ft., with development information as to oil or gas showings more or less a company secret.

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2 — PROPER ADJUSTMENT . . . run chains snug but not fiddle string tight. A chain with excess slack and a rapid clutch may snap when picking up load and break. Too slack a chain will ride sprocket teeth and even cause chain to jump off sprockets. Adjust properly and save money!

3 — PROPER LUBRICATION . . . use good, light mineral oil only, SAE-30 or 40. Faulty lubrication kills more chains than years of normal service. Do not use a spent oil that has previously been used to lubricate an engine or pump. The presence of oil on outer chain surfaces does not necessarily mean that chain is properly lubricated. To be effective, the lubricant must penetrate between pins and bushings—constantly. To prevent corrosion, reduce friction and wear, lengthen chain and sprocket life . . . lubricate properly and save money!

4 — PROPER CLEANING . . . some chains are still operated openly without an oil bath. Such chains should be lubricated frequently and occasionally removed for thorough cleaning and lubricating. Always apply lubricant to such drives from inside of chain rather than out since centrifugal force tends to throw it off and oil must pass through chain when applied inside.

5 — PROPER SPROCKETS . . . inspect sprocket teeth at regular intervals. Worn teeth damage chain. Renew sprockets before they begin to wear badly and do not place a new chain on sprockets that are worn to any considerable extent.

6 — PROPER CHAINS . . . selection of proper chains—as well as sprockets—is the final secret to Link-Belt's "longer service with less maintenance". Drives must be suitable to power transmission required. Chain should be inspected regularly. If these pointers are observed, you'll seldom replace Link-Belt chains. Use Link-Belt chains and sprockets—and save money!

• If you want further advice on chain and sprocket care, please write us. And if you want "longer service with less maintenance" . . . if you want to increase your drilling profits . . . always specify LINK-BELT chains and sprockets.

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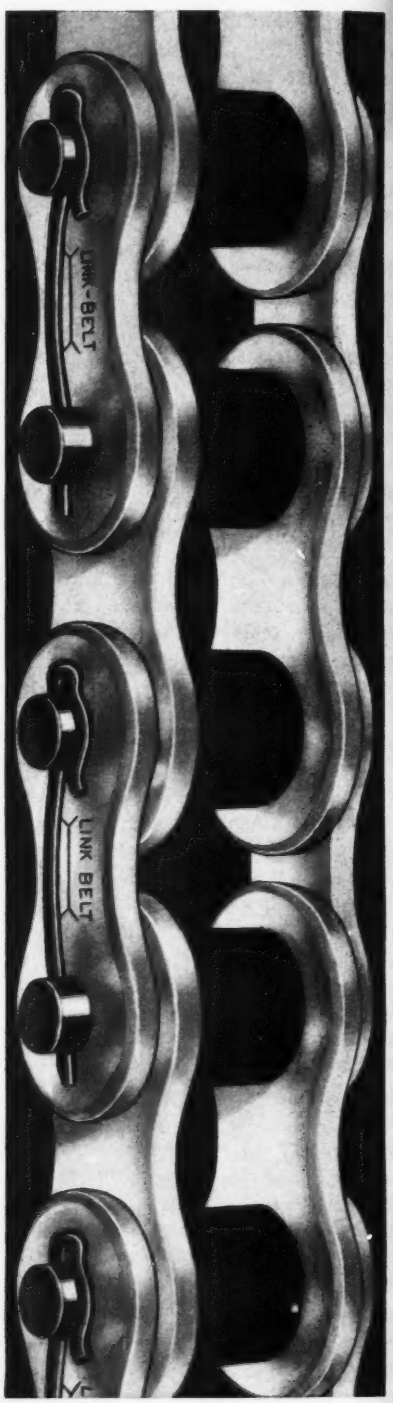

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Kern County OIL NEWS

THANKFUL AGAIN WAS KERN last holiday ago. Rightfully so as well as so appropriately. FUEL situation better. More CRUDE withdrawn than stored. Late autumn cold snap was further delayed, but it was cold in other places.

AT THE SAME TIME production was down in several quarters . . . especially in some neighboring counties. Earth movements were effective in lost production. Kern-oilwigs were wondering how much replacement might come from these quarters as a result, but they were by no means happy. The same thing could happen here. It did once in minor proportions.

CHRISTMAS WHICH IS JUST around the derrick for people might bring presents of good news. Total drilling for the year is better figuratively speaking than anticipated. TRUMORS after the TREMORS also brought up price speculation talk . . . backlog repairs and et cetera.

IMPORTATION OF OIL considered by two groups, picture varied foregrounds. A new oil committee was organized in Kern to pro and con a program of research to see which is the Toni.

PAUL J. HOWARD of Kern County drew still another picture which was by no means an artist's conception of a firm tax structure, but rather a rough looking draft of what might be shaping up in the back ground after the detail was oiled in—or out as you like it.

ON THE OTHER HAND Standard Oil Company presented its tax check ahead of tax deadline which for the first half was the largest in the history and totals over a million and a half dollars. Second installment will total the grand amount of the year over 3¼ millions.

KERN OIL SCOUTS have moved again. Now meeting on Wednesdays at HERB KING'S TAVERN on 18th street. These peram-

New Oil Committee Chairman: William (Bill) R. (for Richardson) Winton, Secretary Treasurer, Palomar Oil & Refining Company has been named Chairman of the Kern County Oil Committee by Director A. B. (Tex) Newby of the Southern California Gas Company.

bulators of technical information deserve much credit again for a consistency of effort. Always beginning at nine a.m. they carry through past noon. Instead of scurring to the next stopping place, Herb King brings on the chow and eliminates the starts and stops. "Good deal . . . and a good meal" say they.

WE NOTICE THAT while the work is different, while one leadership may be continued from the OIL SCOUTS onto another organization, it is by no means tentamount . . . to hold office in "SJGS" as a result of OS work.

SAN JOAQUIN GEOLOGICAL SOCIETY held its annual election. This group . . . as you know presents papers and problems in the oil areas here as they may be related . . . to general comparable conditions everywhere.

LEADERS for the 1950 SJGS's are President, JOE BRYAN of Union Oil; Veepee KEN KRAMMES, of the Texaco; and for Secretary Treasurer from the Western Gulf Oil Company, RALPH BRODEK. Our best wishes.

BELRIDGE'S B ANDEROB was present at the California Cattlemen's Association's Kern Chapter Annual reception. His remarks at post banquet were timely. He referred to our bromide, which spelled out, as they say in "DC" his reasons for associating with "cowigs". He agrees that many a cowman has a grazing lease . . . and that many an oilman has a production lease. Most successful ranchers show a couple oil leases on their inventory of assets. Said an oilwag who heard our conversation, "A. H. KARPE'S $65,000.00 bull is worth more than the average oilwell net each year". We doubted if any bull was worth so much, but he called attention to this column which we scribble for "COW" (California Oil World) as an example instead.

AL TIETZE'S AL JR. was present also at the CCA . . . but then he is paid for keeping livestock well instead of around the well. How he ever got away from the oil industry only . . . his dad knows. Al Sr. used to say "once an oilwig always an oilwig."

LOOKED OVER THE TELEPHONE SHOULDER at the year's end inventories in OILDOM this month. An interesting thing which will be published perhaps before you read this, is: "CUYAMA VALLEY TODAY" . . . (and by the way to date.) . . . something like this . . . "Since that famous day in June . . . a rare oil day indeed . . . 168 wells all producing over 31,000 B/D." Herein lies the story of the year which is never tiresome in its most minute or detailed narration.

BOB MAYNARD WHO LEFT the geological department of Richfield is well situated with Barns-

dall, according to discussion overheard at the Scout luncheon.

KERN COUNTY COMMUNITIES have announced that Supervisor ARDIS M. WALKER from Kernville has been favored by the Kings, Kern and Tulare counties "demos" for nomination at the primary election. He will, if nominated, oppose TOM WERDEL present congressman. Tom crossfiled on both parties last time and won over a half dozen candidates. Understanding is that Walker will not crossfile and consolidate the votes.

DOWN PASADENA WAY we attended the NAP and had to take one . . . as National Air Pollution smogwigs 400 strong built up a nebulae of real technical information. Anyone there almost, could take a sample of your suit and tell whether you lived north or south of the Tehachapis.

THOSE LAKES WE SAW IN Victoria . . . were the Lawrence Lakes . . . not the Charlie's. Names on the register at Straith's . . . that is. Lawrence was there too . . . but the only time he "signs" is an order for a new car for some oilwig.

IN DENVER LAST MONTH where the industry continues to be more active. We saw wells . . . new ones being drilled in places where nothing is left of the buffalo but the grass it lived on. Judging from the California Zephyr skyroom it made us have more faith in the underbelly of Mojave terrain. Only exception, oil has been found in real quantity, as we looked at it in a small wallo that was substituting for a sump.

MR. F. E. MC PHILLIPS head landman for Richfield has reported that Jimmy West former assistant of the land department leaves to go into the land management, and gas & oil leasing for himself. We will miss seeing him in his old job, but tender "bests" for his venture. Great American privilege . . . to own property . . . go into business or represent people in political subdivisions.

INTERESTING OIL PEOPLE whose golf scores are even more so or at least as much. CHARLES GOODNO, ALLEN SEDGEWICK, FLOYD BOWMAN.

THOSE WHO ALSO play with them . . . ORAN PALMER, ART SANFORD, LOU KISSENGER, THOSE WHO DON'T play with them. SID CHAFFIN, DOYLE HOLDER, DOROTHY JEANNE BROWNE. Include ourselves.

"OUTLAWS" . . . as both of them call themselves to us . . . but don't you do it . . . "FE and TE" Lawless . . . talk technically about oil coolers and torque converter pumps. It's an unit of GM power or something that takes the place of a thousand slaves that works to maximum efficiency, dispatch and shows increasing returns for the blackgold endeavors up here in Kern.

BILL WHIMPEY postcarded us that Taft Chapter CNGA had H.V. (Lefty) COWGER as program chairman at the last meeting and R. R. AUCHMUTY gave interesting data on "The 27-B Pool Pressure Maintenance Project". Also on the same program something new in safety was propounded by Scotty McCormick. A tour took place through the 27-B Pressure

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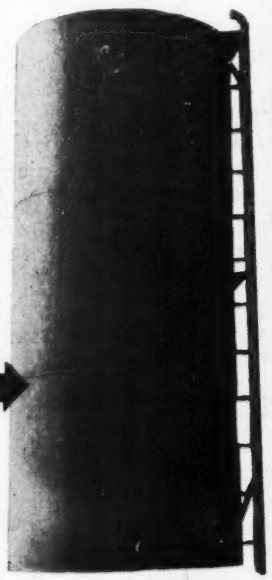

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Maintenance Plant out at TAFT.

TAFT CHAPTER API had an interesting meeting also. W. P. SIMMS on November 15th following election of officers for 1950, gave a discourse on the "Lakeview Pool Midway Sunset Field". Something new on Fishing by a movie rounded out the evening, according to WM. C. Bailey. We forgot to ask him what kind of fishing. More about this next month.

OMAR CAVINS has the best voice on the phone. Friends of Omar will be glad to know that although he is a finished product as far as pioneering goes in his line . . . he still is pioneering . . . making new friends keeping the old ones and admits he has been around Kern County a long time. Occasionally we see him in print in Arabia or near those parts. At anyrate we call him the plentipotentiary extraordinary as special envoy in finding new oil production methods to conquer.

OILMEN ARE WHERE YOU FIND THEM. Recently this month we saw them from our own bailiwick in Salt Lake, Denver, Wyomingway . . . heading for the National API meetings. We saw them in Death Valley too. They were on the scene where a hundred years ago their forebears were after yellow gold. We see them after black gold . . . and while they make more money but save less, we find one here and there raising white gold, but never picking it . . . and five or six of them are experimenting with ramie. Still pioneering. The hardships are the same only different . . . sleeping out at Death Valley in sleeping bags made from coaloil trying to imagine the other hardships of a hardy century ago.

JIMMIE BURNS formerly of Fellows is applying the free enterprise system by selling Texaco products at Oleander & Brundage. It takes a heap of education, college degrees and social engineering to be a rugged entrepreneur these days . . . then you have to give up and depend on others too.

THAT OIL DERRICK at Traffic Circle just before you get to Supply Row, Contractors Lane and Oilwell Square, reports that the Community Chest is doing all right . . . and oilright. No it is not a wildcat but an example of oilwig ingenuity in putting things over. The quota is almost subscribed and it only means about the cost of drilling one good oil well. May the benefits accrue in value to perpetuate the production of good citizens here. Atop the derrick figures change almost hourly as the returns show pay cores.

AT THE CLOSE OF THIS WRITING long ticket treks for the Spud Bowl Schriner's classic with Boise are coming in from Taft which won the toss for the Junior College annual event of the West. All oilmen will be at "SPUD BOWL" . . . with a single wish unfulfilled . . . "How About An OIL BOWL?"

OILMEN RECEIVED good news from JOHN DOUBENMIER, Administrative Head Kern General Hospital as he pointed out a tax savings of $2 million dollars recently when he talked before one of their groups at El Tejon.

BEN PETERS one of the oil industries best local boosters and optimists on the immediate future in

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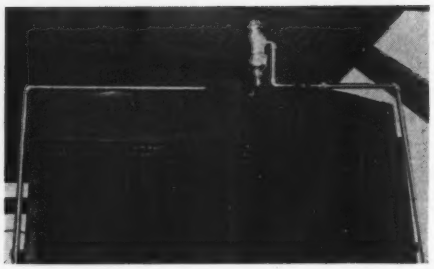

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SIRVECE OF CALIFORNIA

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oil has had a lot of hard luck. It seems that the best people fare worst when misfortune spuds—in. Ben's wife has been seriously ill, but the other day we saw her out for the first time. We hope she continues to improve. Ben is cheerful through it all, and recently he was down too with the result of most patient work in trying to restore the health of two people instead of one. Ben says these things just happen to all Production Pioneers after they reach anywhere from 50 to 80. Ben looks only half that old.

HERM WEDDLE REPORTS THAT he never did play golf. About the only geologicalwig that doesn't on Saturday and Sunday by the looks of Stockdale recently. Another one we know about that doesn't is Al Dewire. However, his fishing pardner the Reverend Whiteneck does. 'Twon't be long.

WEDDING BELLS are not ringing very often these days for the bachelor crew of which we view so frequently. There has been a slump in Kern County oilmen weddings . . . according to oilscoutmasters.

THANX TO THE INDUSTRY'S representatives and its associated public news services. On our recent trips we found that Kern was always associated with the deepest oil producing well in the world.

TED FISHER FROM PALOMAR writes from Dunkirk, New York in a rather optimistic tone. It may coincide with some the API-wigs who attended a meeting there too. We are waiting to piece all the stories together. Larry Miller who is due here in a few days from an extended tour, will, have, we hope, at least a couple stories for which he is also famous. His stories are bound to be good even in dull production times.

IT IS RUMORED that Dr. Joe Smith out north of the heavy zone is seriously but not too seriously, thinking about running a line of heavy crude for "nofog" operations at the Kern Airport. Kern is vying for national airport recognition as so many big planes are set down here for weather conditions. And it is rumored also that instead of 97% flyible days the oil industry could make it a 100 with some of the unwanted heavy crude to lighten the runways.

ERNEST ELLERY has announced that he will leave the home of the famous Oil Zone come the New Year. Ernie has been associated with the El Tejon Hotel as its general manager for nearly a decade. He will be sorely missed by the oil fraternity members who were all his best friends.

OIL IS BEING HEMOGENIZED AS it were for spraying the new Death Valley 49ER's Centennial trek which is just as dusty today as in 1849 says A. W. NOON, President of the DV49 Association.

FIFTY YEARS AGO the biggest oil burning engine for the hoist at Yellow Aster mine at Randsburg was reported installed, according to local new items appearing last month. Prosperity and labor do seem to follow machines.

WILLIAM ALEXANDER PEYTON died last month at the age 84. He will be remembered by Kern Oil pioneers as the grand old blacksmith who shoed the horses and also mules that brought out oil from the banks of the Kern a half century ago. Evidence at the museum shows that he even shoed oxen which wear a half a horseshoe or two small half moon strips of steel.

ONLY OTHER LIVING horseshoer we know of is wealthy HENRY BRANDT popular well known and respected pioneer who is still active in real estate, some oil holdings . . . enterprises of Kern. He helped dig Kern River oil too in his part which was played with pioneering vision.

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Field Development

Los Angeles Basin

Douglas Adds Oil Properties

W. G. Krieger, president of Douglas Oil, has announced the acquisition by the company of extensive acreage in three of California's most productive oil areas. A substantial increase in the company's production of moderately light gravity oil is foreseen by the oil executive in the near future. Douglas holds a 16-2/3 per cent interest in 16 wells producing at Placerita Canyon. In addition, the company owns an 18⅓ per cent royalty interests in 30 wells in various operations stages. Krieger also made known the company anticipates starting a drilling job immediately after the turn of the year on its 200-acre lease not far from production in Cuyama Valley.

Santa Fe Job Digs

Union Oil Company's Bell No. 107 in Sec. 6-3s-11w in the old Santa Fe Springs field is redrilling at 8526 ft. The project went originally to 13,541 ft. and then ran into a fishing job at 8888 ft. On Sec. 32-2s-11w, St. Anthony Oil Corporation is commencing St. Anthony-Farwell No. 3. The No. 2 at last report was inactive at 4650 ft.

Potrero Well In

In the old Potrero field, near Inglewood, Basin Oil Company has recompleted its Potrero No. 8 on Sec. 34-2s-14w for an initial yield of 443 barrels of 41 gravity oil through a 17/64-in. choke. This is the third time that the project has been recompleted by gun perforations of sand stringers. The well was first drilled in 1940 and recompleted in 1941. The new zone open to production is 3162-3223 ft.

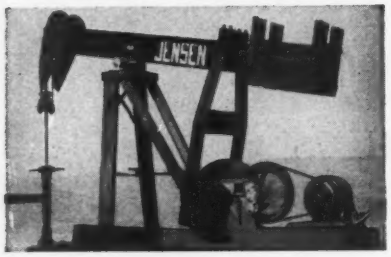
Del Valle Lease Site

Acquisition of another 40-acre parcel in the Del Valle-Ramona area of Los Angeles County by Southern California Petroleum Corporation was a subject of interest in oil circles. The property on Sec. 9-4n-17w was acquired from Stuart M. Salisbury and S. L. Gillan. It completes a block of 400 acres on which exploratory work is planned early in 1950. The newest lease is adjacent to and south of the company's 200-acre Daugherty lease and joins on the north the Kinler quarter-section lease contiguous to its 160-acre Terrel property in Sec. 16. The block surrounds the easterly portion of Standard's Sepulveda holdings. R. E. Havenstrite owns Del Valle production on the south half of Sec. 16-4n-17w. Havenstrite's Lincoln No. 16 on the section is drilling at 9755 ft. This project is understood headed for a 10,000-ft. horizon producing 42 gravity oil in Lincoln No. 15. Two new drilling jobs have started in the Del Valle area. They are the Jack Herley and Paul L. Kelley Starry No. 2 on Sec. 17-4n-17w and the Rexford Oil Company Socalpete-Kinler No. 1 on Sec. 16. St. Helen Petroleum Company has abandoned its Ladd No. 1 wildcat on Sec. 7-4n-17w at 4501 ft.

Riverside Test Drills

Airways Petroleum Corporation is drilling ahead below 2500 ft. with its Santa Anaheim No. 1 explorer in the Corona area of Riverside

In the Placerita Canyon Field at Atlantic Oil Co.'s Brison No. 2. Left to right: J. L. Kelly, derrick; D. L. Nafziger, lead tong; M. W. Dickey, driller, J. D. Cook, backup; H. Servance, cathead.



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County, following a successful fishing job. J. D. Hooper is drilling the venture on contract.

Hesperia Try Works

Redrilling has reached 700 ft. in the Allied Oil & Gas Corporation Moore No. 1 wildcat test on Sec. 17-4n-1w in the Hesperia area, San Bernardino County. Original bottom was 1766 ft. In the Victorville area, the H. T. and G. G. Widney No. 1 wildcat on Sec. 13-6n-4w is down to 660 ft. and cleaning out. The Western Research Lab. Inc. No. 1 on Sec. 1-3n-7w in the Cajon area is idle at 2503 ft. The A. C. Anderson Black Butte No. 1 on Sec. 26-6n-7w near Victorville, likewise, is inactive at 2202 ft.

Calabasas Try Digs

Chadwick & Trower at last reports was making hole ahead near 750 ft. with No. 1 well on Sec. 32-1n-17w in the Calabasas sector of Los Angeles County.

Aliso Canyon Wildcat Spuds

Mission Adrian No. 2, sponsored by Union Oil Company on Sec. 35-3n-18w in the Aliso Canyon area, has spudded and is drilling ahead in the shallower formations.

Solemint Try Drills

Four and one-half miles northeast of Saugus, Sun Valley Oil Company is drilling at 2340 ft. with its Benz No. 1 test in the Solemint area in Sec. 8-4n-19w. Fairview Exploration's HCL No. 1 on Sec. 24-4n-15w is drilling around 1000 ft.

Newhall Try Idle

Drilling has been suspended in E. M. Breen's Betsy Linda No. 1 explorer in the Newhall area in Sec. 1-3n-16w. The project was carried to a total depth of 2819 ft. before it was plugged back and perforated in the interval of 690-800 ft.

Placerita Still Busy

A recent checkup at operations in the Placerita field disclosed about 60 wells working at progressive stages. Also revealed was that currently there are approximately 160 wells on production there averaging 175 barrels a day each. In the 60 productive acres embracing the north half of the northeast quarter of Sec. 31-4n-15w there are 125 producing wells or roughly 2 per acre average.

Whittier Test Digs

Drilling is going forward near 700 ft. in E. D. Taylor Company's No. 1 on Sec. 11-2s-11w near the Baldwin ranch in the Whittier area.

Long Beach Quake Damage

An approximate 125 wells may be in line for redrilling at Long Beach as a result of the 12-second earthquake. Focal point of damage was the same sector which has been slipping during the past several years. A survey indicated that casing in most of the wells was sheared off by the lateral movement of the tremor in a zone between 1700 and 1800 ft. An earlier quake on December 24, 1947 damaged 98 wells of which 24 never got back on production. Of the 98 wells, 16 were among those hit by the quiver several weeks ago.

Newhall Try Digs

West of Placerita on the Circle J Ranch in the Newhall area, General Petroleum is making hole ahead below 1000 ft. in No. 2 test well on Sec. 26-4n-16w. The company's No. 1 well went to basement at 7400 ft.

Seal Beach Adds Producer

Continental Oil Company has completed its Bixby No. 42 on Sec. 11-5s-12w in the Seal Beach field for 415 barrels of oil and 200,000 cubic ft. of gas from 6811 ft. The Hellman Estate No. 38 well on Sec. 12-5s-12w is drilling at 1100 ft.

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Lost Hills Try Sets Pipe

General Petroleum is drilling ahead below 7550 ft. with its Williamson No. 33-11 deep test well on Sec. 11-26s-20e in the Lost Hills area, after cementing protection string at about 7045 ft.

Kern Bluff Well Deepens

National Steel & Shipbuilding Corporation is deepening from old bottom of 2050 ft. its State No. 1 at Kern Bluff on Sec. 30-29s-29e. The well suspended drilling last September. It is now aimed for the Vedder formation.

McVan Well Abandoned

Redrilled to 3376 ft. after whipstock was set at 2507 ft. General Drilling Company's Fitzhugh-USL No. C-9 on Sec. 14-27s-27e in the McVan area has been abandoned. Total bottom is 3550 ft. The No. C-8 was completed at 3610 ft. for an initial output of 20 barrels of 17.8 gravity oil a day, cutting 75 per cent.

Ant Hill Try Fails

Southeast of wells producing in the Ant Hill area, Kern Oil Company has pulled out of its Bloemer No. 75 test on Sec. 26-29s-29e, Kern County.

Carrizo Try Digs

The Carrizo Plains area of San Luis Obispo and Kern County is the scene of an interesting test well. It is seeking new oil under an agreement between E. T. Willard of San Francisco, Universal Consolidated Oil and Independent Exploration. Located on Sec. 9-29s-19e, the well is being drilled by Willard. In the event success is attained in this first venture then the other two companies will participate in a 50 per cent interest in full development of the 1600-acre lease held by the combination on Secs. 4, 5, 8, 9 and 16-29s-19e. The project, about three miles southeast of the most southerly well drilled by Universal and Independent on the Rexroth property, at last reports was at an inconclusive depth. Texas Company has started the drill in its Grayson-Owens No. 2 wildcat on Sec. 13-31s-18e.

Jacalitos Well Starts

Signal Oil has started a new well on Sec. 28-31s-15e in the Jacalitos Dome area of Fresno County. Location falls on a 160 acre lease from the Snowolene Oil Company, whose officials include Charles A. Son, a veteran member of the California oil fraternity. Signal also leased from affiliated interests of Mr. Son, an additional 240 acres on Sec. 18-21s-15e. In the Kerman area of the county, L. M. Lockhart's Kerckhoff No. 1-23 wildcat has been abandoned at 6310 ft. on Sec. 32-13s-17e.

Cymric Well Drills Ahead

Standard Oil has spudded in its Anderson No. 76 on Sec. 19-29s-21e in the Salt Creek sector of the Cymric field. The derrick is about 960 ft. northwest of Carneros Oil Company's Anderson Community No. 3, which was completed early last summer as a new pool discovery. The oil finder put out 150 barrels of 23 gravity oil at 2531 ft. Interval open was 2433-2455 ft. Carneros Oil's second well was finished last September. It was 480 ft. north of the discovery well and ran high on structure. It produced about 100 barrels a day.

Fossils Found Near Coalinga

The remains of a sea cow which inhabited the earth around 30,000,000 years ago have been unearthed near oil fields at Coalinga. The fossil deposits were found by Roy H. Reinhart, University of California scientist. Known technically as sirenians, the sea cow belongs to an order of mammals of which very little is known. Previous to the discovery at Coalinga, only two skulls, two partial jaws and some of the teeth of the prehistoric beast had been uncovered by fossil seekers. The sirenians are best known as forming the basis for the legend regarding mermaids, creatures considered to be half human and half fish, which have been the subject of song and story for time immemorial.

Santa Maria Drilling Co., contractors for Westgate and Greenland Oil Co.'s well A-12 at Long Beach Harbor. Left to right: Joe Russell, derrick; Elmer Morehead, cathead; Hank Dixon, driller; Floyd Cook, lead tong; Paul Wallace, pipe racker.

Cuyama Valley Yet Developing

Three miles northwest of Russell Ranch production, Richfield Oil's Florence No. A-2 on Sec. 21-11n-27w in Cuyama Valley is drilling ahead at 1020 ft. Location is about 1000 ft. northwest of Florence No. A-1, which was given up two months ago at 4095 ft., following conventional tests of the interval of 3200-3500 ft. Results of the trials are a company secret. Approximately 25 miles southeast of the Russell Ranch, the company's Apache Unit No. 1 wildcat on Sec. 22-8n-24w is drilling below 7100 ft. Several miles still further from the ranch in the same general direction, Richfield's Round Springs Unit No. 1 is a location on Sec. 32-8n-23w. Richfield has two new producers on the ranch. They are Russell No. A 55-8 on Sec. 8-10n-27w and Sloan No. C 181-26 on Sec. 26-11n-28w. They produced initially 127 barrels and 463 barrels a day, respectively. At South Cuyama, Superior Oil has completed Heath No. 26-25 on Sec. 25-10n-17w for 312 barrels from a finishing depth of 4663 ft.

Trico Adds Good Gasser

An excellent gas producing well has been scored by Standard of California in the Trico field. Known as Tulare Farms No. 5 on Sec. 35-24s-23e, the well came in at 3521 ft. for a yield of 5,356,000 cubic ft. of gas through a 46/64-in. orifice.

Tejon Hills Adds Producer

The Tejon Hills area of Kern County continues to play an important role in shallow oil development. O. M. Slosson has completed his Tejon No. 3 at 473 ft. for a satisfactory yield. The 7-in. casing was cemented at 412 ft. Tejon Hills Oil Company's Tejon Hills No. 18 on Sec. 11-11n-28w is pumping at an unestimated rate from 580 ft. In the Tejon-Reserve area, Richfield Oil is drilling at 1150 ft. with its Tejon No. B 55-R-34 on Sec. 34-11n-19w. The project is a northerly offset to the Rose L. Bright well. Rose L. Bright's Bright No. 2 on the section is drilling below 2350 ft. Enterprise Oil's R. E. No. 57, also on the section, has reached 3900 ft.

Painted Rock Wildcat Digs

On the Painted Rock anticline, Texas Company is digging below 700 ft. with its Blakey No. 1 exploratory well on Sec. 16-32s-20e in San Luis Obispo County.

Calder Test Fishes Liner

Down 8811 ft., General Petroleum is fishing liner in its Sturdevant No. 61-26 test well on Sec. 26-29s-25e in the Calder area. The company's KCL-Calder No. 58-23 on Sec. 23-29s-25e is a foundation.

Mt. Poso Test Due

Designed to test the Vedder formation, Union Oil is about due to spud its Williams No. 24-5 venture on Sec. 5-28s-28e, south of the Mount Poso field.

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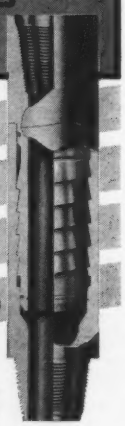

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Boulder Creek Wildcat Drills

Honolulu Oil, Seaboard Oil and the Doheny interests are drilling below 1670 ft. with their joint Hinman No. 1 wildcat on a 5000-acre block of leases in the Boulder Creek area of Santa Cruz County. The venture probably will go to a minimum depth of 7500 ft. if production fails to show at a shallower level. Texas Company and Standard of California and other large operating organizations are represented by substantial property interests in the area, where oil seepages and outcrops abound. Next year should see the start of several exploratory wells at Boulder Creek.

Moody Gulch Test Digging

In the West Moody Gulch area, Merle W. Wheeler is down 340 ft. with his cable tool job on Sec. 6-9s-2w, Santa Cruz County. The project is called Wheeler No. 1.

Yolo County Venture Quits

Having cored gray sand and with no encouragement visible to 4047 ft., Amerada Petroleum Corporation has called it quits with its Capay Community No. 1 on Sec. 36-10n-2w in the Capay area, Yolo County.

La Honda Try Works

Drilled and cored to 1260 ft., Pomona Tile Manufacturing Company is moving in heavier equipment to go deeper with its Pomona No. 1 test well in the La Honda area in Sec. 16-7s-4w, San Mateo County.

Ozema Test Hits Granite

C. W. Colgrove's Wright No. 54-18 wildcat well on Sec. 18-7n-23w in the Ozema area of Ventura County has been bottomed in granite at 4394 ft. It appears that there were showings of oil and gas in this project and they may be the subject of interrogation.

Montalvo Job Drills

At Montalvo, Standard of California is digging at 4640 ft. in the McGrath No. 26-10 well on Sec. 30-2n-22w near El Rio de Santa Clara. The well was spudded in November 23.

Santa Barbara Well Inactive

In the San Marcos area of Santa Barbara County, Lewis W. Welch has quit drilling at 6240 ft. in his Welch Janeway No. 1 on Sec. 11-6n-29w. Showings of importance were evidently absent to bottom. On Santa Rosa Island, the J. R. Pemberton Tecolote No. 2 is inactive at 918 ft. Also idle is the Evans Carter & Associates Rancho Viejo No. 2 on Sec 3-9n-32w in the Tepusquet area. Formerly known as Ontiveros No. 1, the well is down 1510 ft.

Four Deer Well Quits

Sunray Oil Corporation's Los Flores No. 7-A on Sec. 4-8n-33w in the Four Deer field has been abandoned at 915 ft. The drill started September 9, 1949.

Arroyo Grande Well On Pump

On the pump for an unestimated yield is the C. W. Colgrove McDonald No. 2-5 test on Sec. 6-32s-13w in the Arroyo Grande area, San Luis Obispo County. Elberta No. 1-5 on the section is about to be completed at a comparable depth.

Sespe Creek Venture Idle

Standing idle at 1903 is the Sweet Development Company Faught No. 1 test at Sespe Creek, Sec. 17-5n-19w, Ventura County.

South Mtn. Well Pumps

Pumping initially 75 barrels of net 18.2 gravity crude oil daily, Texas Company's Willard No. 28 on Sec. 18-3n-20w at South Mountain was finaled at 3948 ft.

San Miguelito Deep Test Digs

Continental Oil's deep test well, Grubb No. 65-E on Sec. 23-3n-24w in the San Miguelito field, is digging deeper at 14,200 ft. The field was opened up by C.C.M.O. Com-

Well pulling crew of American Oil Service Corporation at Union Oil Co.'s well, Rosecrans No. 48, left to right: A. J. Bastion, well puller; G. Van Hooser, operator; G. B. Van Hooser, well puller; J. O. Harmon, well puller.

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pany's Hobson No. A-2 discovery well on September 4, 1930. The project bottomed at 10,030 ft., but produced from 7600 ft. It was the deepest well in the world at that time.

San Miguel Test Works

Drilling at approximately 3850 ft. was the latest word from C.C.M.O. Company's Mahoney No. 1 wildcat in the San Miguel area, San Luis Obispo County. Location is in Sec. 3-25s-12e.

Santa Paula Well Drills

Paula No. 1, a drilling job undertaken by Crestmont Oil Company at Santa Paula, is making hole ahead below 2000 ft. It is on Sec. 22-4n-21w.

Simi Try Spudded In

Spudded in and drilled ahead at an inconclusive level is the Northridge Oil Company Simi No. 1 wildcat at Simi, Sec. 31-3n-17w, Ventura County.

Monterey Test Stops

Drilling has been suspended at 1243 ft. in John S. Horn's G. J. No. 1 wildcat test on Sec. 23-15s-1e in the Monterey area of Monterey County. Exploration was in the Ord Terrace sector.

Eureka Canyon Wildcat Quits

At Eureka Canyon in Ventura County, Thornbury Drilling Company's Thornbury-Oceanic No. 2 on Sec. 33-4n-18w is idle, after swabbing water and a little oil. The No. 1, a prior test, was abandoned at 1723 ft. following collapse of casing.

Tar Creek Developing

Union Oil Company has started two more drilling jobs in the Tar Creek area of Ventura County. They are Tar Creek No. 52 and Outlook No. 1 in Sec. 28-5n-19w.

Personalities IN THE NEWS

Booth Named Gen. Mgr. of Sales of Spang-Chalfant

The National Supply Company recently announced the appointment of Edwin A. Booth as general manager of sales of the Spang-Chalfant Division of the company.

Edwin A. Booth

He has been a member of the National Supply organization since 1929.

Born in Pittsburgh, Pennsylvania, Mr. Booth attended schools there and Pennsylvania State College, where he received a degree in mechanical engineering. Upon graduation, he entered the metallurgical department of Spang-Chalfant, and two years later was transferred to sales. After sales department experience in Pittsburgh and St. Louis, he was appointed manager of the Tulsa district in 1942, returning to Pittsburgh four years later in a similar capacity.

N. van Wingen, Vice-President of Petroleum Technologists, Inc., Montebello, California, has been elected chairman of the Pacfiic Petroleum Chapter of the A.I.M.E.

Ed Craigo, oil field supplyman, and C. L. Fowler, contract driller, took time off recently to fish and hunt in the Sacramento area.

Arnold D. Bennison, manager of the oil supply and exchange department of General Petroleum Corporation, was honored upon his completion of 30 years with the company at a luncheon at the Los Angeles Town House. Thirty leading executives of General Petroleum gathered to congratulate Bennison, who joined the firm in November, 1919.

Ted Drake is the new manager of the recently organized Petroleum Club at the Los Angeles Biltmore. He has been prominent in oil circles for many years.

Bagging their respective limits of pheasants, Ken Hammill, capitalist, Ed Cooper, McCullough Tool Company, and Clayton Severns, Severns Drilling Company, have returned to Los Angeles from a hunting sojourn in the Colusa district.

Edward M. Loftus and Thomas A. Young, identified with real estate and oil activities in California, were in attendance at the conference of Southern California builders at Coronado.

L. F. McCollum, president of Continental Oil Company, has been named a member of the board of directors of J. P. Morgan & Company, Inc., New York.

Masonic services were held at Inglewood cemetery for Frank J. Darby, oil company foreman. A native of Yugoslavia, he died at his home on Sloan avenue, Compton.

The Lunkenheimer Company Appoints Vice President And General Manager

The Lunkenheimer Company announces the appointment of Paul M. Arnall as Vice President and General Manager of The Lunkenheimer Company, manufacturers of valves and engineering appliances. This action results from a decision of the Board of Directors and the Management to divide the functions of President and General Manager into two separate functions, in order to provide for a better distribution of the top management administrative responsibility.

Paul M. Arnall

Mr. Arnall assumes his new position January 3. A native of Elk Falls, Kansas, he was educated at the University of Kansas and has had wide experience in the industrial field. With the Graton & Knight Company, Worcester, Mass., he rose to Assistant General Sales Manager. He then became associated with The Ohio Injector Company, Wadsworth, Ohio, as Sales Manager and for the past several years has been Executive Vice

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Lunkenheimer management organization now consists of Frank P. Rhame, President; Paul M. Arnall, Vice President and General Manager; Homer E. Lunken, Vice President and Assistant General Manager; Harry A. Burdorf, Vice President—Sales; Edmund P. Lunken, Vice President; Chester C. Isekeit, Treasurer; Charles W. Burrage, Secretary.

Freeman and Merkel Advance

Wendell M. Jones, Vice-President, Bethlehem Supply Company of California, announced recently that effective December 1, 1949, J. R. B. Freeman, the Company's District Manager at San Francisco, was promoted to General Manager of stores. Mr. Freeman, a graduate of Stanford University, has been Manager of San Francisco Operations since 1947 having been promoted at that time from the position of Sales Engineer at Los Angeles. Mr. Freeman's new headquarters are at the general offices in Los Angeles.

Frank Merkel—R. B. Freeman

Frank T. Merkel, Sales Engineer in the San Francisco office since 1940 became District Manager of the San Francisco area. Mr. Merkel is well known among the refinery men in California and has broad experience in refinery construction.

The Red Feather flag of the Los Angeles Community Chest was received by President R. L. Minckler for General Petroleum and by Solveig Lipus and Nina Cole for the employees of the corporation. The presentation was made by Major J. F. Douglas for the Chest. The flag is presented to firms where the company and employees have made outstanding contributions during the current campaign.

Present at the November 16 meeting of the Los Angeles Nomads were the following foreign guests: Left to right—Front row: Virgil Freel, Texas Petroleum Company, Colombia; G. H. Atkins, formerly Iraq Petroleum Corp.; Jesse F. Roberts, Iraq Petroleum Corporation, Qatar; C. T. Blanchet, Richmond Exploration Co., Venezuela; L. E. Hess, Socony-Vacuum Oil Co., Colombia. Back row: Lee N. Bradley, Texas Petroleum Company, Colombia; Travis S. Coggan, Basrah Petroleum Co. Ltd., Iraq; Karl B. Jauman, Basrah Petroleum Co. Ltd., Iraq; Phil McConnell, Arabian-American Oil Co., Arabia; S. L. Slaughter, Tropical Oil Co., Colombia; Frank Walmsley, English Drilling Equipment Co. Ltd., London, England. Not pictured—O. H. Arnold, Socony-Vacuum Oil Co., Egypt; T. A. Connor, Iraq Petroleum Corp.

Stengel Makes A Hit

Casey Stengel, Manager of the World Series winning New York Yankees, "laid 'em in the aisles" with his side-splitting account of his days in baseball, as the featured speaker of the evening at the monthly November Nomads meeting. The little guy who stood up against the all-time great pitchers in baseball, Walter Johnson, Christy Mathewson, and others, had some uproaring tales—the time the storm closed around his high fly and carried it over the fence—the game that went 31 innings because the base runner wore house slippers—the saga of the new catcher who gave the wrong signals—how Boom Boom Beck got his name.

Carl Zamloch, old time ball player, former owner of the Oakland Ball Club, and official of Signal Oil and Gas Co., proved himself to be the most mystifying magician yet seen. How he made that card stick on the ceiling, Nomads are still trying to figure out. Carl's only props were a deck of cards and a sales patter better than any vaudeville show.

The program was introduced by M. O. Johnston who handled it with all the savoir faire of an old time after dinner speaker. We are indebted to M. O. for his special effort in arranging the splendid evening.

J. R. Pemberton, popular petroleum geologist and engineer has been elected president of the Pacific section, American Association of Petroleum Geologists, for 1950. Arthur S. Huey, Hancock Oil Company, was named vice president, and Milton W. Lewis, secretary-treasurer.

Forty-three sets of psycho-physical testing aids for use in the new required courses in auto driver training in all California high schools were presented formally to Superintendent Alexander J. Stoddard of the Los Angeles high school system by Geepee President Robert L. Minkler. The company's presentation was a contribution to the high school driver education program in the state.

Daniel Fred Martin, 83, former head of land and lease operations for Standard of California, died in Los Angeles after a long illness. He joined the company in 1910 and was in charge of acquisition of land in Southern California during the early development of major oil fields in that area.

At A. A. P. G. Pacific Section Meeting

Left to right: C. R. Dodson, A. I. Leverson, Milton W. Lewis, newly elected Secy.-Treas. AAPG, Pacific Section; Bill Pemberton, newly elected President, AAPG, Pacific Section; Theo. A. Link, Consultant, Canada, National Vice President, AAPG; C. W. Tomlinson, National President, AAPG.

Left to right: Ursel Armstrong, Aden Hughes, Homer J. Steiny, Henry Salvatori, Harold Rader, Past Secy.-Treas., AAPG Pacific Section; Aden Hughes, Past President, SEPM, Pacific Section; Wm. Thomas, C. H. Westby; Clifton W. Johnson, Past Pres., Pacific Section, AAPG; R. M. Kleinpell, Earl B. Noble, Wallace L. Matjasic, Chairman Arrangements Committee.

Left to right: Harold Rader, Past Secy.-Treas., Pacific Section, AAPG; Clifton Johnson, Past President, Pacific Section AAPG; Art Huey, Newly Elected Vice Pres., Pacific Section, AAPG; J. J. Bryan, Newly Elected Chairman, San Joaquin Valley Geology Society; Peter H. Gardett; Harvey Lee; W. P. Winham; W. D. Rankin, W. H. Denning; Frank B. Carter.

A. James West has resigned his position as assistant manager of the land department of Richfield Oil Corporation. He plans to engage in the business of oil property management and oil and gas leasing under his own name.

Donald H. McLaughlin, president of Homestake Mining Company and prominent geologist of San Francisco, is the new president of American Institute of Mining and Metallurgical Engineers. His tenure will be 1950. John E. Sherborne, Union Oil Company, was elected chairman of the institute's petroleum division.

Clair J. Gibson, oil producer and contract driller, was a recent business visitor in Fresno and other Fresno County areas.

Karl W. Thompson, Hollywood realtor for more than 30 years, who was in the Texas oil business before coming to Southern California, died at his Temple Drive residence, Hollywood.

Joseph E. Pogue, known wherever oil is produced, was recently elected to the Gulf Corporation's board of directors. He also will serve the company in a consultant's capacity. Pogue is an oil economist and vice president of the Chase National Bank of New York.

Schaller Joins McCullough

McCullough Tool Company, a manufacturing, engineering and oil well service organization, announces the appointment of Herman E. Schaller to its staff of sales engineers, according to I. J. McCullough, president.

Herman E. Schaller

Mr. Schaller, formerly Division Sales Manager of the Rocky Mountain-Mid-Continent Division of Eastman Oil Well Survey Company, has had a very interesting and complete technical oil field background.

Born and raised in Western Canada, Mr. Schaller came to California in 1936 to enroll at the University of Southern California, graduating in 1940. In 1947 he received his Master's Degree in Petroleum Engineering, after a year of graduate studies, during which time he was a lecturer in the College of Engineering.

His engineering background includes two years with the Division of War Research at Columbia University as a field engineer and consultant to the U. S. Navy on anti-submarine warfare and sonar.

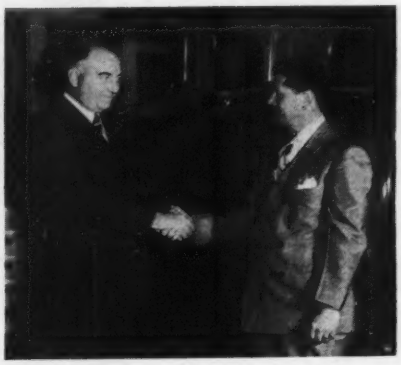
His oil field engineering experience includes three years with the Conservation Committee of the California Oil Producers as a field engineer, one year with the Texas Company as development engineer and two years with Eastman Oil Well Survey Company as sales representative and division sales manager.

The resignation of A. James West was announced by officials of Richfield Oil Corporation.

Widely known throughout the oil industry, Mr. West was first employed by Richfield during the formation of the new company in 1937. He advanced to the position of Assistant Manager of the Land Department in which capacity he was responsible for an important part of the land and lease acquisitions of the company.

Jim, as he is popularly known among his many friends, plans to engage in the business of oil property management and oil and gas leasing under his own name. He is a native of Los Angeles and is a member of the Jonathan Club, the Petroleum Club, and the Oil Club.

Bill Whaley, vice president of Barnsdall Oil announces that an additional contribution of some $160,000 will be paid to company employees who are members of the Barnsdall voluntary savings program, such payments to be made as of December 31, 1949. Approximately 92 per cent of Barnsdall's 1400 workers will share in the gift. The $160,000 appropriation is over and above the regular monthly contributions by the company to this plan, the oil executive explained.



Ralph Arnot, General Manager of Fageol Motors, Inc., Seattle (left) and Wilson D. Patterson, White's Pacific Coast Regional Manager, "shake" on the deal that made Fageol Motors the Seattle distributor for White Trucks. "The third partner in this important deal," said Arnot, "is the model 3000, White's new revolutionary truck which is also seen in the background." Both Arnot and Patterson believe that this new White model will be an important factor in getting this new distributorship off to a flying start.

Ralph Arnold, famed oil and mining geologist, is currently spending much time in Texas, where he has successfully located several structures. Three are currently the scene of wells drilling and two are mapped out for early exploration.

Appointment of Virgil Fowler as San Joaquin Division Manager for the H. C. Smith Oil Tool Co. has been announced by Ronald C. Smith, General Sales Manager.
Front row, left to right: Lester Clark, Bookkeeper (Bakersfield); Frank Zuech, Field Salesman (Bakersfield); Virgil Fowler, San Joaquin Division Manager; Doc Cook, Field Salesman (Bakersfield).
Back row, left to right: Ogden Arnold, Field Salesman (Avenal); Bud Armstrong, Bakersfield Branch Manager; Howard Bond, Taft Branch Manager; Curley Huffman, Field Salesman (Bakersfield); Charlie Thompson, Field Salesman (Bakersfield).

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AT HELPFUL ASSOCIATED DEALERS

TIDE WATER ASSOCIATED OIL COMPANY

A.I.M.E. Junior Section November Meeting

The meeting was opened by the chairman who welcomed the 95 members and guests and turned the meeting over to a panel of speakers who discussed the various aspects of chemical and mechanical treatments for improving production of oil wells.

The first speaker was E. G. Bemiss of Standard Oil Company who described his experiences with the washing of low gravity wells having unconsolidated sands and interbedded, incompetent, shale bodies. He pointed out that well washing becomes more and more important as the production of a well passes the flush period and approaches the economic limit. The basic purposes of well washing are twofold: the removal of drilling fluids, filter cake, and cuttings from the well bore after drilling and, secondly, the removal of asphalt residues, sloughing sands and shales and any material which accumulated after the well was put on production.

The degree of plugging of the sand faces at the well bore has been considerably reduced by the improvement of drilling fluids, i.e., low water loss muds and muds with oil filtrates. However, all drilling fluids must necessarily form some filter cake which materially reduces the permeability at the sand face. In presenting his conception of the plugging phenomenon in gravel packed (prepacked) liners, Bemiss described the condition of the hole at the time of drilling is finished and the liner is being run. At this time the incompetent shales and unconsolidated sands are held in place by the mud column. However, upon removing the mud and putting the well on production, some sand and shale immediately sloughs into the annulus between the outside of the liner and the well bore. Thus the annulus is filled with detritus consisting of shales, sands, various argillaceous materials, precipitated salts, asphalt residuals and oil. Thus there is formed a mass of material which has no permeability relation to the original pay zones. To enter the well bore the produced oil, gas, and water must pass through this material. Plugging of this kind has

caused the production from one lease to decline from 8000 b/d to 25 b/d in a matter of several years. By calculation of the oil in place, it is obvious that such a decline is not normal.

Also, in cases where this rapid decline has been experienced, new wells drilled on a five-spot pattern will have an initial production very similar to the original wells and will be clean, whereas the original wells may have an appreciable water cut. Redrilling of wells which have become plugged is not uncommon but it is obviously a very expensive solution, often times having poor results unless the well is whipstocked to open up clean sand faces. The most practical and cheapest solution is to remove the plugging material by one of the many washing methods. Although comparative data are difficult to accumulate on the effectiveness of various well washes, it has been well determined that the best time to remove the plugging materials is at the time of completion of the well. Various types of well-washing chemicals and methods are available but it is imperative that the operator have some knowledge of what is causing this plugging, so that the proper method can be selected. In the opinion of Bemiss, the ideal well wash should have the following characteristics: (1) a cleaning or detergent action, (2) low surface tension to reduce the possibility of forming water blocks, (3) it should not hydrate (swell) included clays or bentonites, (4) should not form emulsions with the well fluid, and (5) should be non-toxic to personnel handling it. A mechanical agitator is commonly used with the various well washing liquids and many types are available.

Some of the agitating tools in common use are: circulation washers (commonly used with oil), mechanical pressure washers used with either oil or washing solutions, and mechanical "surges" used with either oil or washing solutions. Circulation washers are not desirable because they only give a jet action and necessarily maintain a high fluid head against the formation. Mechanical pressure washers are considered to be better because they give a surging action without maintaining a high fluid head. Bemiss described a relatively new innovation in well washing known as the "gas pack" which involves the relatively slow (2 to 3 second) combustion of a gas-forming material which surges the chemical or oil in the well bore through the liner and on dissipation of the gas pressure the fluid surges back into the hole carrying the plugging materials with it. Very little work has been done with this method so its results are still in doubt. Of the well washing jobs in which Bemiss has been personally involved, 49% were considered good, 15% marginal, and 36% doubtful. However, the 49% were so successful that they more than paid for the marginal and doubtful jobs.

The meeting at this point was turned over to a representative of Long Beach Oil and Development Company who showed photographs of the experimental surface washing of one 20-foot and two 10-foot sections of 6⅝", pre-packed, gravel liners recovered after one year of operation in a Ranger zone well in the Wilmington field. The tests consisted of suspending the plugged sections of liner in a derrick and washing through the liner with 27° oil using a mechanical pressure tool. It was found that the perforations broke down at 450 psi and final washing was continued at 175 psi. As far as can be determined, this was the first formally conducted test in which an actual plugged liner was recovered and washed at the surface where the action of the washer and its effectiveness could be observed and photographed. The most significant fact obtained from this experiment was that a liner tends to break down over only a fraction of its circumference thus leaving, in some cases, a large portion of the area of the liner still plugged. Production entering the well thus has to travel in a circumferential direction to a point in the

liner where it has access to the well bore. As pointed out by Bemiss, the annulus between the liner and the original well bore is filled with sand, shale and other material which tends to impede flow around the circumference of the liner.

H. D. Aggers of Union Oil Company spoke briefly on the different aspects of acid treatment with string shots and perforation cleaning with knife-type tools. He pointed out that acid should only be used in zones where it could be expected to have some action on the zone and that use of acid in non-reactive formations is not only costly but might have detrimental effects. The use of acid in conjunction with a string shot was first used in 1947 and, although operators differ in the method of use, the most common practice is to first bail the hole clean and then spot the acid and set off the string shot. Some operators prefer the use of a light oil, such as diesel fuel, in preference to the acid and, of course, in the case of non-reactive zones, the use of light oils is recommended. The procedure in detail consists of bailing all sand or other material from the well then the string shot is run in and out of the hole to be sure that sufficient clearance exists. The tubing is then lowered to the bottom of the liner and 15 to 20% excess acid is spotted in the liner and the string shot is again introduced and set off. The well is then put on production immediately. The 22,500'/second velocity of the string shot results in the penetration of many of the impermeable zones which would normally not be penetrated by high volume or a high pressure washing.

The use of knife-type perforation cleaners is recommended for the removal of clogging material in slotted liners. This method is particularly effective for removing scale, hard sands, or shales and it has been the practice in some fields to run this tool prior to washing to insure that the liner is open. Opening clogged liners with the knife method is also considered good insurance against liner failures because the velocity of the fluid entering the liner is kept to a minimum.

To complete the discussion of well completion and reconditioning methods, Randolph Smith of Seaboard Oil Company described his company's experiences with formation fracturing in the Bandini Hills field. The purpose of formation fracturing is to increase the entry rate to the well bore by fracturing the pay-zone through the injection of oil at a high volume and pressure. The well selected for this testing was about 8000' deep and was producing from hard, relatively impermeable sand and, at the start of the test, was flowing by heads. After formation fracturing had been completed and injected oil recovered the well production showed a substantial increase with no increase in gas-oil ratio; however, the production decline was unchanged. The total amount of additional oil recovered by this method was 2600 barrels. The cost of the operation was approximately $3,600 and indicated a payout period of 41 days. A second attempt was made to fracture this well using twice the injection rate; however, there was no indication of further fracturing. From the data presented, it appears that this form of secondary recovery has a definite possibility of success. However, there has not been a sufficient number of wells fractured to completely evaluate the results.

A short period of questions and answers ensued. The meeting was adjourned at 10:00 p.m.

Shell Development Company Announces Emeryville Expansion

The importance of industrial research in an increasingly competitive market was affirmed recently by Shell Development Company's president, Dr. M. E. Spaght, in an announcement of the company's plan to erect a new 4-story administration building. The contract for construction of this addition to the petroleum research company's laboratories in Emeryville, already the largest in the West, has been awarded to Christensen & Lyons, Oakland.

Part of a construction program now underway, the new administration building was designed by architect Roy A. Lippincott, American Institute of Architects. It will allow for a shifting and reallocation of space within the Emeryville plant and provide additional space for both laboratory facilities and the large Shell Development Company staff.

The straightforward, modern design of the building utilizes reinforced concrete throughout for structural purposes as well as fireproofing. External aluminum louvered shutters and jalousies accent the west and south elevations and provide protection against glare. Internally, large office areas will make maximum use of semi partitions to provide flexible, easily ventilated and well-lighted working facilities.

Shell Development Company started at Emeryville in 1928 with a single laboratory building and a staff of 35. With the completion of this new building, the company's research facilities cover an area of 15 acres and will house 1200 employees, all contributing to the scientific advancement of the petroleum and chemical industries. Early efforts were directed toward the development of chemicals from petroleum gases. Since 1933 the company's work has been expanded to include the entire field of oil refinery processes and the improvement of products. Shell Development's research program attracted national recognition by winning the Chemical Engineering Achievement Award for 1948.

Contributing to the developments and discoveries meriting the award were several Shell Development Company firsts in scientific achievement. These included processes for increasing the volume and quality of gasoline produced from each barrel of crude oil, important for the conservation of the nation's natural resources; recovery and synthesis of TNT-grade toluene during the war years; butadiene manufacture for synthetic rubber; contributions to the development of super-octane aviation gasoline; and a new recovery process which increased the available supply of penicillin. Last year, Shell completed the world's first commercial plant for the synthesis of glycerine, an outgrowth of work at Emeryville in the field of allyl compounds.

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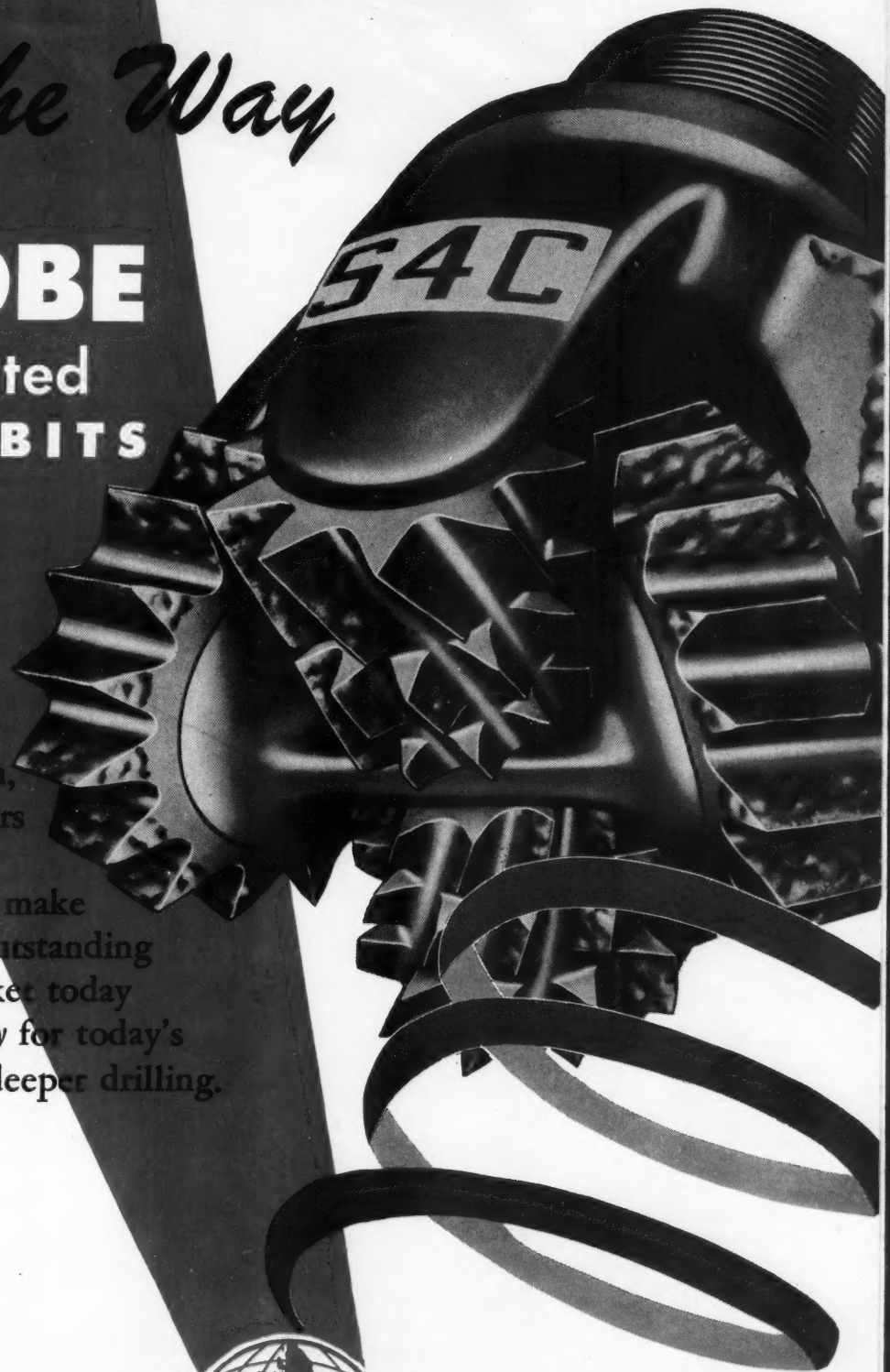

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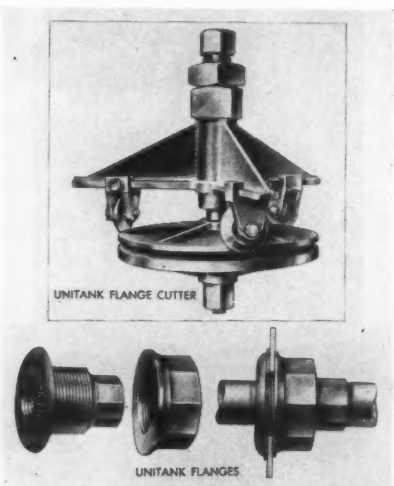
New Flange Announced by American Pipe

An extremely effective, time-saving pipe-to-tank connection — the Unitank Flange is announced by the manufacturers, American Pipe & Steel Corporation of Alhambra, California. This patented device, used in conjunction with the American Unitank Flange Cutter, provides a simplified method of connecting pipes to the outside or inside of a tank in only a few minutes, it is stated.



The Unitank Flange is made up of 2 pieces, a flange body and a tightening nut. The flange body, tapped both ends and threaded outside, is inserted through a hole of the proper size from the inside of the tank. The tightening nut (or outside piece) has one face flanged out and finished. It is attached by means of a **left-handed thread.** Thus tightening a pipe in the flange tends to tighten the flange in the tank rather than loosen it as is the case with a right hand thread. Only one gasket is necessary. This is placed on the flange body against the collar on the **inside** of the tank to insure absolute tightness. Since it is not in contact with the flow, it cannot blow out.

Because the Unitank Flange body is threaded inside both ends, pipes can be attached to the one fitting **inside** and **outside** the tank. Or a pipe or nipple may be attached to the flange by rotating the body until pipe is tight, and then tightening the nut.

The Unitank Flange is a machined, malleable casting with a tensile strength in excess of 50,000 lbs. Thus it withstands shocks—won't crack or break when tightened or struck—is perfectly safe in case of accident or fire. Available in pipe sizes ½-in., 1-in., 2-in., 3-in., 4-in. and 6-in.

The Unitank Flange Cutter operates on a simple combination punching and shearing can-opener principle. It is reported to be easy, quick, safe and efficient for cutting any thickness of steel up to and including 3/16" (or 7 gauge). First a small hole large enough to accommodate cutter shaft is drilled or punched in the tank (or sheet steel). Threaded cutter shaft is inserted and back plate is bolted on to shaft from inside the tank. Outside cutting wheels, guided by outside guide plate, punch and shear accurate hole of desired diameter when motivated by wrench applied to outside cutting shaft lug nut.

Guide and backing plates or discs are provided for each size of flange from 2" to6". For ½" and 1" flanges, smaller cutters are available from the manufacturers, American Pipe and Steel Corporation, Alhambra, California, who guarantee the products and assure immediate delivery.

Clark Centrifugal Compressors And Expansion Turbines

Two recently released bulletins by the Clark Bros. Co., Inc., describe their pedestal-type centrifugal compressors, expansion turbines, and axial flow compressors.

Designed primarily for high pressure, high capacity operation, the pedestal-type centrifugal compressor, according to the manufacturers, is suited for moderate pressure ratio air or gas compression duties such as pipeline boosters, catalytic cracking air compressors, and process gas boosters.

Design features of the centrifugal compressor are described to be advanced and thoroughly proven in practice. The shaft seal normally employed with high pressure operation is a floating, self-aligning sleeve-type seal which uses high pressure oil or other suitable sealing liquid. Sealing is described as not depending upon mechanical contact of the sealing elements, but is accomplished by means of a pressure liquid film principle. Alternate types of seals, such as restrictive carbon rings, shaft labyrinths, or mechanical contact surfaces are available when operating conditions indicate such changes.

The bearing pedestal contains the journal and thrust bearings for the drive shaft. The oil reservoir for the lubrication system is also a part of the pedestal, eliminating the space required by an external oil reservoir. When the compressor is operating at relatively low pressures, the sealing oil may also be taken from the pedestal, the manufacturers state. By removing the pedestal covering, routine inspection of the bearings and oil pump can be made without disturbing piping or auxiliary equipment.

The drive shaft is constructed of carbon steel which has been heat treated, machined, and ground to dimensions. The impellers are described as being milled from solid forgings, after which the disc and cover plates are joined by rivets which pass through the vanes.

Normal operating speeds have been designed so that the compres-

sor may be driven directly by condensing or noncondensing steam turbines, or combustion gas turbines. Provisions for electric motor drive can be provided. Depending upon the process requirement, the compressor may be set up to operate with discharge pressure, suction temperature (refrigeration systems) or weight flow held constant. Changes of operating conditions are translated into slight changes of compressor speed by simple control equipment, the manufacturer states. Automatic throttling of the suction gas can be done on constant speed applications by having the control operate a butterfly valve in the suction line.

Clark Expansion Turbine

The expansion turbine is described by the manufacturer to meet the long-standing need for a machine that would be reliable and efficient in expanding gases for process work. The unit is described as offering important advantages whenever gases must be reduced in pressure before going to process, or where extra refrigeration is needed to compensate for heat leaks into a cycle.

The casing is constructed of carbon steel for ordinary application. For special low temperature duties, low temperature embrittlement-resistant alloys, such as nickel or stainless steel may be used. The housing which contains a double journal bearing and oil pump is described to be constructed of semi-steel. Bolt holes are provided for mounting the pedestal on a structural steel or sole plate base.

The interstage diaphragms are made in one piece and are constructed of cast iron for most duties, the manufacturer states. Connection in the case is made by shrinking to lands bored in the casing. Each diaphragm is fitted with an aluminum labyrinth ring to prevent interstage leakage. The nozzle springs are described as being milled from a solid alloy steel forging. Accurate positioning is insured by assembly to lands milled in the diaphragms.

The rotor shaft is constructed of alloy steel which is properly heat-treated, machined, and ground to dimensions. The expander wheels, it is explained, are milled from solid alloy steel forgings. They are mounted with a press fit on the shaft, and held in place with a shaft nut and key.

Martin-Decker Draw Bar Dynamometer

The Martin-Decker Draw Bar Dynamometer is designed for use on traction tests of various vehicles, to determine horsepower, strength of structures, or in any other place where a pull or torque is to be measured.

The instrument consists of a combination Indicator, Recorder, and Measuring Element. The Indicator Gauge has a range to 50,000 lbs. Draw Bar Pull. The Recorder can be furnished in any chart speed from 2° per hour to 6″ per minute.

The Measuring Element is a simple, rugged hydraulic device that has good sensitivity and is very easy to apply. It may be disconnected at any time with a leakproof disconnect coupling and can be supplied with any suitable length of hose, so that Recording and Indicating Gauges can be mounted at desirable locations for easy reading away from vibration. The Gauges are housed in a weatherproof case. Further information may be obtained from Martin-Decker Corporation, Long Beach, California.

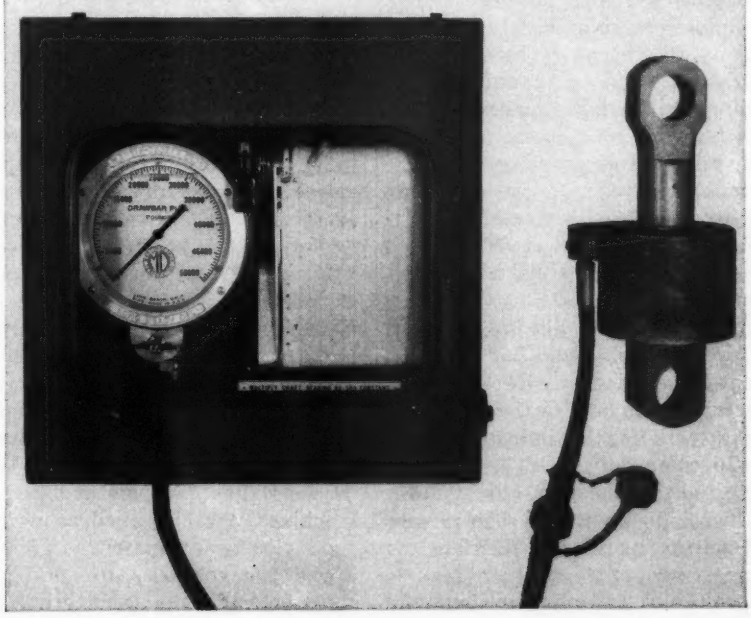
Pioneer California Manufacturer Expands Service Outlets

The E. H. Edwards Company, manufacturer of wire rope, has just announced the appointment of the Republic Supply Co. of California as a distributor. By this move, seventeen new outlets in the central and southern portions of the state were acquired. Stocks will be carried in all Republic field stores as well as in the new $1,250,000 head office and warehouse in the industrial district of Los Angeles.

The Edwards Wire Rope Company was founded in 1916 by Eugene H. Edwards, despite the advice of conservative bankers and industrialists who were then of the opinion that steel products could not be manufactured on the west coast in competition wih the large eastern companies. There were too many obstacles. All steel was manufactured in the east, freight rates were high, the price structure was not advantageous, population was scattered over very large distances and the market was not greatly diversified.

The oil industry was largely confined to the mid-continent and Pennsylvania. Standard tool rigs predominated and the wells were shallow by current standards. The modern rotary rigs which reach

MARTIN-DECKER DRAW BAR DYNAMOMETER



From left to right: Dale Russell, Vice President, Republic Supply Co.; Wally Rushing, Los Angeles District Manager, E. H. Edwards Company; Jack Pike, President, Republic Supply Co.; Roy Johnson, Vice President and General Sales Manager, Republic Supply Co.; Russ Hendrick, General Sales Manager, E. H. Edwards Company.

such great depths and use large quantities of wire rope in the process were unavailable. The Logging industry, concentrated largely in northern California, Oregon and Washington, had not yet developed "Cat logging". The huge construction projects that have been a symbol of the growing west in recent years were as yet undreamed of. Industrial plants were relatively small and scattered and neither fishing nor mining were as highly mechanized as at present. Thus oil, logging, construction, manufacturing, mining and marine—the major markets for wire rope—were admittedly available and growing but they were spread over great distances and were not easily accessible. Also their buying habits were well formed—trade with established eastern companies.

All this seemed like opportunity to Mr. Edwards, who had been an agent for an eastern wire rope manufacturer. He held to the view that the growth of the industrial west would come only from local enterprise and that the area must develop its own industry rather than remain dependent upon such overflow as the east saw fit to grant it. He felt that the coast would welcome the opportunity to deal with a local source of supply and obtain the improved service facilities that could be offered. Eastern manufacturers were a long way from the field of operations and could not possibly have the intimate knowledge of the type of problems that were peculiar to the western area. If he could produce a wire rope that was at least the equal of the best the east had to offer and could add to that the knowledge of western methods, so that exactly the right rope for the particular job could be made, and could supply local stocks and service, he had so much more to offer the user that he could succeed in spite of the warnings of his friendly advisors.

A site was chosen in South San Francisco where the present plant is located. Because the aim was not only to make good wire rope, but the best possible wire rope for specific jobs, it was necessary to control each step of the manufacture from the original wire drawing to the final closing of the rope. Wire drawing, heat treating and testing machines were installed as well as rope closing equipment. This allowed the company to specify to the steel mills the exact grade and chemical composition of the steel that was required and then process the rods through all the many steps required to manufacture a wire rope with known qualities of elasticity, flexibility and toughness.

That there was a real need for a west coast manufacturer to supply west coast users with a product tailored to their needs had been borne out by the steady growth of the Edwards Company and the increasing acceptance and use of Edwards Wire Rope. The company now has branch offices on the coast in Seattle, Portland and Los Angeles and the plant has been constantly modernized as new equipment and engineering techniques have been developed. That the west is an area unto itself and that its problems and their answers are different from those of the east is evidenced by the increasing number of manufacturing plants that are being constantly established.

The Republic Supply Co. of California has a history that is strikingly similar. In 1917, Mr. P. M. Pike, now chairman of the board, established the Republic Well Supply Co. with stores in Taft and Coalinga and main offices in San Francisco. Only pipe, valves and fittings were carried at that time. Mr. Pike had already been closely associated with the oil well supply business, having founded the Federal Drilling Co. which drilled the original rotary well in Oklahoma and over 300 wells in California. He had also established the Tay Pike Co. in Coalinga to introduce tubular goods.

The present Republic Supply Co. of California was incorporated in 1919 and a sales office was opened in Los Angeles. Service to the user —supplying what he needed, where he needed it and when he needed it has been the keynote of Republic's remarkable growth in the years that followed. As soon as oil was discovered, there was Republic. They have operated more than forty supply stores, establishing them almost as soon as the oil strike was made and the need for supplies was evident. Many of their seventeen current stores are as old as the fields they supply. In order to round out their service to the user, Republic established their own manufacturing unit in 1935 to build special ma

chinery to fit the needs of the oil fields.

When western industry began its great expansion in 1941, Republic, after a survey to establish what supplies were necessary, opened its first industrial supply branch in Oakland to serve the San Francisco Bay area. Republic's well known reputation as an energetic service organization served to establish connections with many major manufacturers of industrial equipment and the new department was successful from the start. Warehouse facilities were soon outgrown and a larger plant was purchased in Emeryville, rebuilt to fit their needs, and now serves as the headquarters of Republic's northern California division. The sale of industrial supplies has played an important part in Republic's very fast and healthy growth to a net worth 130 times greater than when it was founded.

Republic Supply Co. of California today represents over 200 manufacturers and has stores in Avenal, Bakersfield, Cuyama, Emeryville, Fresno, Gardena, Huntington Beach, Long Beach, Los Angeles, Newhall, San Jose, Santa Fe Springs, Santa Maria, Stockton, Taft, Ventura and Wilmington.

With its appointment by Edwards Wire Rope, Republic has added another established product to those it sells to western industry and Edwards has obtained wider distribution. Both the manufacturer and the distributor are of California origin, both examples of the growth of western initiative and energy and both proof of the success that follows making good products and good service available to the user.

George Freyermuth, manager of public relations, Standard Oil of New Jersey, has been named chairman of the Oil Industry Information Committee for 1950. He succeeds Conger Reynolds, Standard Oil of Indiana. Three vice chairmen named to serve next year included William Gerwe, Socony-Vacuum Oil Company, Chicago; Stanton K. Smith, Smith Oil and Refining Company, Rockford, Illinois; and Philip Humphrey, Texaco Oil Company, New York.

Five huge anchors and the identifying buoys to which they are to be attached are shown here on deck of barge off Carpinteria, Calif. They will provide a secure anchorage for Standard Oil Company of California tankers at the end of a new submarine pipe line recently laid down approximately 2500 feet to the beach at this location. Tankers will pump gasoline through the line to new tanks to be built near the beach to serve consumers in the Santa Barbara-Ventura area of California.

Edison Well Pumping Oil

South of the Edison field proper, Bay Shore Oil Company has finaled its Doyle No. 1 on Sec. 34-30s-29e for an initial yield of about 50 barrels a day from a plugged depth of 4027 ft. Total bottom is 4382 ft. The oil is clean and coming from the Chanac formation.

What he described as the "purely political appointees" of the Truman administration to key political posts have been criticised by Sumner Wells, U. S. Secretary of State from 1936 to 1943. Answering questions asked by Joseph E. Ray, news editor of the Daily Bulletin at Blackfoot, Idaho, Welles said: "If the present tendency of the Truman administration to replace a number of highly qualified men with purely political appointees at a moment of crisis, it must be obvious that the achievement of the present objectives of the American foreign policy will be greatly jeopardized."

The Cymric Plant

(Continued from Page 11)

water condensate from the steam is recovered and returned to the boilers, no effort has been made to reduce the still steam consumption to a minimum.

The exceptionally low consumption of fuel by the units incorporated in this plant is aptly illustrated in Table 3. The total water circulated at the atmospheric water cooling tower averages 1300 gal./minute. Electric energy is purchased for plant lighting and to drive the L.P.G. and standby shipping pumps only.

The Cymric plant performs smoothly and efficiently, and has fully met all our expectations. The plant was engineered and constructed by J. B. Gill Company and Edw. G. Ragatz, Associate, with the process design being furnished by Edw. G. Ragatz and the detailed engineering and construction performed by J. B. Gill Company. Patent applications are applied for by Edw. G. Ragatz on the rich-oil rectifier cycle employed.

Oilwell Introduces New Portable Derrick to California Operators

The first installation of the new "Oilwell" 128-A Portable Derrick in California fields was recently made at Rio Vista. The derrick was delivered to Tine Gaiser, Bakersfield contractor, and rigged up at the above location. Mr. Gaiser is confident the derrick will affect a saving in moving time and improved operating efficiency of the rig. Crews comments are especially favorable regarding the large floor space, derrick rigidity and good visibility due to the fast line running inside the derrick.

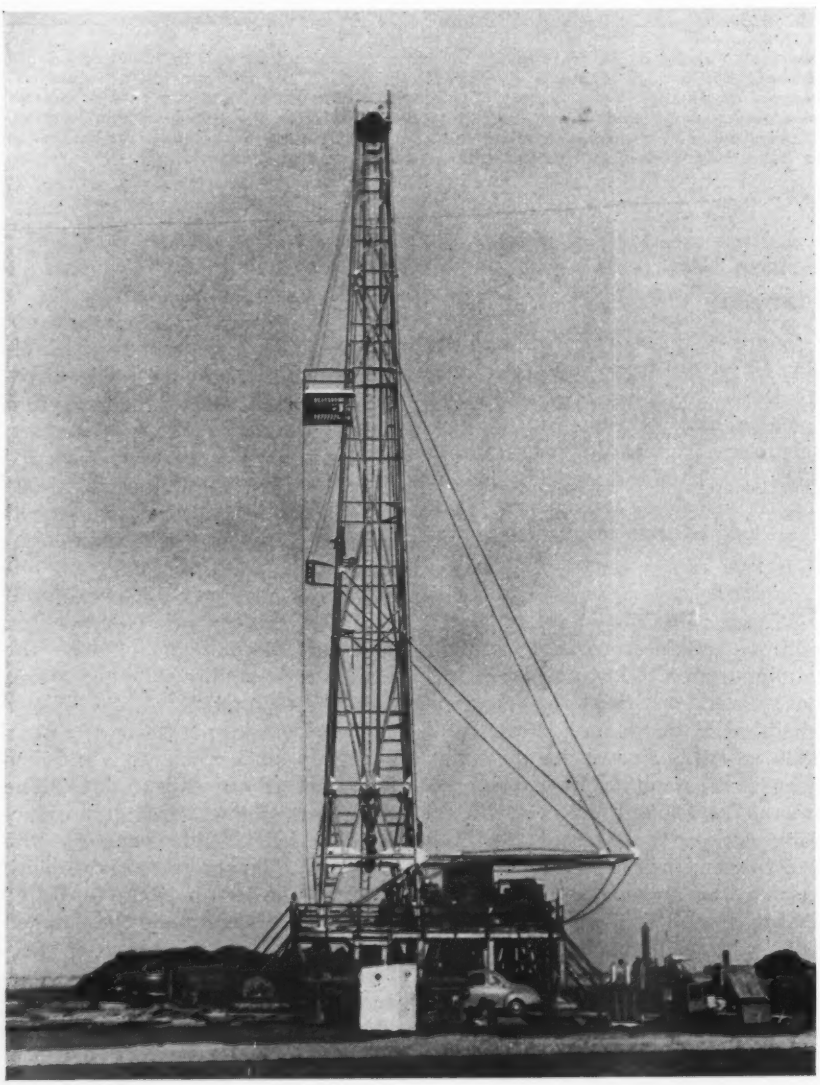
The new derrick has attracted much interest among operators who have viewed it and the first field test in this area should be followed with interest. The derrick was first introduced in Mid-Continent fields and has been well accepted in that area as well as Gulf Coast and Mid-West. A general description of the derrick follows:

Sub-Structure

The sub-structure is made up of two major sections, ten feet high. These are joined at the top by four spreader beams which are set in place on dowels, eliminating all bolting.

Derrick:

The derrick is constructed of fabricated seamless pipe throughout and the front legs are reinforced to permit a clear opening of 100 ft. on the front side. The legs run in a straight line to the top of the derrick. The design of the derrick is such that the drilling line is located inside the rear derrick legs, enabling the driller to keep sight of the traveling block at all times and thus allowing maximum operating speed.



The derrick is constructed in three major sections: (1) Derrick Top Section, (2) Derrick Center Section, and (3) Derrick Lower Section. The top section, including crown block, can be transported as a unit, having a maximum eight-foot width to maintain road clearance. The center and lower sections can also be transported assembled, when it is not necessary to maintain an eight-foot road clearance. The sections can be quickly and easily disassembled and folded into compact units which can be nested for transportation.

To assure quick and easy alignment of each section all joints are flanged. Important joints are doweled to eliminate shear on the bolts, and maintain alignment.

These leg-sections are joined together with flanges that are held in place with bolts and large bullet nosed dowel pins. These joints are in compression at all times and the bolts serve no purpose other than to hold the flanges together. Care is taken at each joint to see that the end of the tubular section is sealed, thus preventing moisture from accumulating inside the sections and causing corrosion.

In the lower section several additional cross members are conveniently placed for installing a casing platform.

Side Adjustment:

The lower end of the front legs are joined to the sub-structure by a hinged joint. This joint is designed to permit 5 inches side-wise adjustment, making it possible to accurately center the derrick over he well.

Adjusting Screws:

The centerline at the crown block can be adjusted with the centerline at the well, a total of 27°, by turning two adjusting screws which are located in the rear legs. These adjusting screws are plated to prevent corrosion and are grease-lubricated. The screw is so designed that under no condition can the threads be exposed, either when moving to a new location or when making an adjustment, thus it is impossible to dam

age the threads. Adjustment is made by inserting a bar through the drilled holes or using chain tongs. A safety feature prevents unscrewing the adjusting screw from the leg without first removing a stop plate.

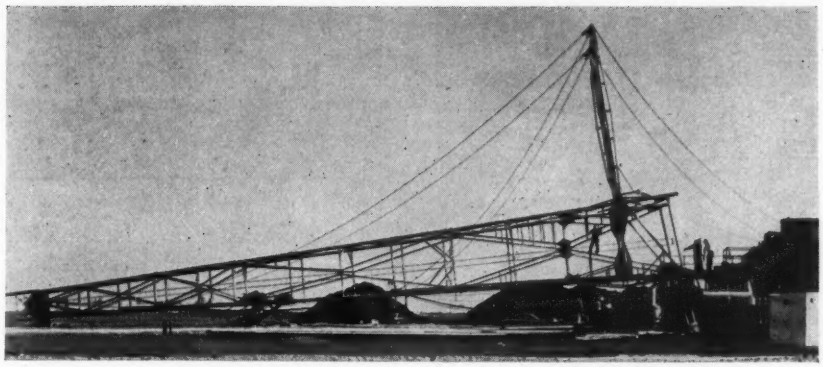
The ends of the rear legs fit into a spherical contact plate and are retained by a steel locking plate. Thus if proper attention is given to correct alignment the operator is assured of correct loading on the derrick legs.

Gin Pole:

The gin pole is constructed in two pieces with flanged and bolted joints. The gin pole serves two functions, first to raise the derrick and second to provide a frame for a roof over the engines and compound.

Pipe Rack:

The large capacity pipe rack has a vertical adjustment to meet the needs of the shortest and longest stands of drill pipe. A swivel-type lever on each finger locks the first row of drill pipe in place to eliminate danger of the racked drill pipe falling over due to wind load. The



locking fingers can be unlocked by stepping on a pin, leaving both hands free. Another feature of the rack is its large size, providing ample working room.

A grooved and spring-loaded lever in the end of the pipe racking board permits a stand of drill pipe to be held in one of three positions. This permits the operator to hold a stand of drill pipe in the most convenient position for efficient operation when running drill pipe.

Crown Block:

A six-sheave crown block with precision balanced 36-inch manganese steel sheaves is built into the top of the derrick. The sheaves are mounted on heavy-duty straight roller bearings with renewable inner and outer races. These sheaves are fully interchangeable. The bearings are pressure lubricated through individual drilled passages in the center pin.

Brief Specifications

Derrick

Capacity	450,000 lbs.
Height—Top of Sub-Structure to Centerline Crown Block	128′-2″
Window Opening Front Side	100′
Floor Space—Centerline to Centerline Legs	14′x19′-6″
Length Gin Pole	31′-4″
Height at Gin Pole from Floor	9′-2¾″

Sub-Structures

Length	42′-6″
Width	21′-10½″
Height Standard	7′-8″
Optional	10′-0″

Crown Block

Capacity	250 tons
Diameter Sheaves (for 1⅛″ wire line)	36″
Number of Sheaves	6

Pipe Racking Capacity With Full Hole Tool Joints

Drill Pipe Size 3½″	12,600 ft. Approx.
4½″	11,300 ft.
5″	10,080 ft.

Dimensions of Folded Derrick and Sub-Structure

Derrick Top—1 piece	8′-0″x 9′-2″x45′-8½″
1 piece	4′-7″x10′-0″x16′-6″
Derrick Center Section—4 pieces	
2 pieces	7′-0″x12″x42′-4″
2 pieces	6′-0″x10″x42′-4″
Derrick Lower Section—4 pieces	
2 pieces	10′- 0″x12″x43′-3″
2 pieces	8′x10″x43′-4″

Pipe Rack—1 piece 9½″x8′-0″x14′-2½″.
Gin Pole—2 pieces 4′-2″x9′-4″x31′-4″
Base—2 pieces 8′-0″x42′-6″x5′-4″ or 7′-8″ or 10′-0″
Ladder—6 pieces 2″x15½″x22′-6″
Miscellaneous Braces, Spacers, etc.
Floor—Optional 74 pieces 3″x12″x6′-6½″ boards

Weight (lbs.)

With 7′-8″ sub-structure	74,640
With 10′-0″ sub-structure	77,400

For Martin-Decker

In line with their policy of constantly expanding service and distribution facilities to meet the growing needs of the oil industry, Martin-Decker Corporation, Long Beach, California, has appointed Reed Roller Bit Company as their Canadian distributor.

Twenty years' experience as exclusive United States distributors (except in California) eminently qualifies Reed Roller Bit Company to adequately meet the Weight Indicator needs of Canadian operators.

Under this new arrangement Reed is providing complete field service, including instrument pick-up and delivery to service headquarters, qualified repair and service facilities, and maintaining adequate stocks of instruments and spares.

According to E. L. Decker, Reed's service facilities have been augmented by Martin-Decker direct factory representatives, and Martin-Decker's policy of selling through recognized supply houses has been extended to Canada.

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LAUGH THIS OFF!!

"A last," groaned the elderly diner, "total paralysis of the left leg! I've feared it for years."

"If it relieves your mind any," whispered the sweet and more or less demure young thing on his left, "it's my leg you're feeling."

Mary had a little lamb. Sad, but that's what happens to a girl who allows a black sheep to pull the wool over her eyes.

Mistress: "I'm glad to hear you're engaged, Dorothy. When are your nuptials coming off?"

Dotty: "On our wedding night, Ma'am, and not a minute before."

When loyalty questionnaires had to be filled out by government employees all over the country, a rugged individualist in San Francisco put down some information that gave the examiners something to think about.

In the space devoted to her foreign activities, this young lady wrote: "Before the war I spent one year in Germany. Does this make me a Nazi? I also spent one year in Russia. Does this make me a communist? I also own property in the Virgin Islands."

Period.

At a breakfast table one morning a man was reading in the paper that a couple in Colorado were buried in a snowdrift for 18 hours. He looked up at the waitress and said:

"How would you like to be buried in a snowdrift with your sweetie?"

"Listen, bub," she replied, "if me and my sweetie wuz buried in a snowdrift, we'd be swimming in 20 minutes."

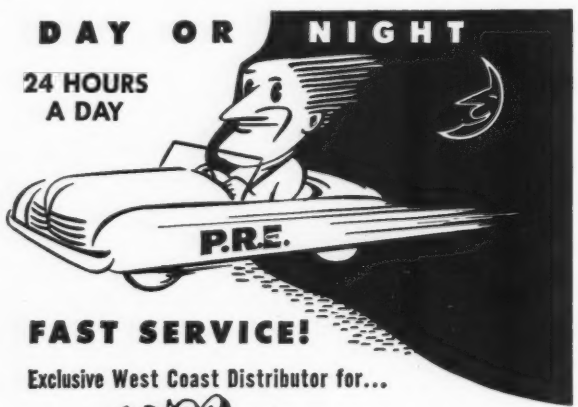
He was a lonely hitch-hiker and stopped at a lonely farm house and asked to be put up for the night. The occupant of the house was a finicky old maid and she explained that there was only one room.

"That's all right," said the hitch-hiker, "I'll get a pole from the fence and put it across the middle of the room. Then you'll feel safe while I'm sleeping on the divan."

After the lights were out the old maid called across to her guest: "You said you were a college man. Do you go in for athletics?"

"Oh, yes, I'm a pole vaulter."

Silence for a long time, then the old maid's voice muttering to herself: "Well, I suppose there's a time when a man gets out of training."



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